OR 42 Expressway Management Plan

Lookingglass Road to I-5 Exit 119

REFERENCE MATERIAL **August 2013**

Prepared by:

DAVID EVANS AND ASSOCIATES INC.

Prepared for:

Oregon Department of Transportation

OR 42 Expressway Management Plan:

Lookingglass Road to I-5 Exit 119

REFERENCE MATERIAL

Prepared for

Oregon Department of Transportation, Region 3
3500 NW Stewart Parkway
Roseburg, Oregon 97470

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon 97201

August 2013

Overview

This companion document to the OR 42 Expressway Management Plan (EMP) contains the technical memorandums and analysis that was prepared during the development of the EMP. It also documents the public involvement that was conducted throughout the planning process.

Oregon Department of Transportation

DAVID EVANS AND ASSOCIATES INC.

Reference Material

Technical Memorandum #1: Review of Adopted Plans, Rules, and Regulations

Technical Memorandum #2: Study Area Definition, Goals and Objectives

Technical Memorandum #3: Existing Conditions

Technical Memorandum #4: Future Baseline Conditions

Technical Memorandum #5: Concept Development and Evaluation

Technical Memorandum #6: Public Involvement Summary

Note: When viewingan electronic version of this document, items in the Table of Contents are hyperlinks that will direct you to the specified materia. References to figures, tables, and appendices are also hyperlinks that will direct you to the referenced item.

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Technical Memorandum #1
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1. REVIEW OF ADOPTED PLANS, RULES, AND REGULATIONS

The purpose of the OR 42 Expressway Management Plan (EMP) is to allow officials to determine how best to improve and preserve the Expressway's mobility, safety, and operations along the corridor. The study area is shown on Figure 1-1.

This memorandum identifies the relevant state, regional, and local existing plans, policies, standards, rules, regulations, and other applicable documents and assesses how they pertain to development of the OR 42 EMP. Furthermore, it provides a regulatory framework that helps identify goals and objectives for the EMP. Information developed in this memorandum is intended to guide decisions regarding selection of preferred alternatives and management measures for the EMP. This information will help ensure the EMP is developed to be compatible with existing relevant regulations and policy objectives.

The relevance of the EMP and how the EMP planning process will be consistent with plan provisions is summarized for each element reviewed. The EMP may need to be adopted by Douglas County and the City of Winston. The EMP may require County and/or City comprehensive plan amendments in order to incorporate the recommended facility improvements into the TSPs or add or amend policies to implement the EMP.

1.1. Statewide Planning Documents

The following statewide planning documents were reviewed:

- Statewide Planning Goals 1, 2, 3, 4, 5, 6, 7, 9, 11, 12, & 14
- Oregon Transportation Plan (2006)
- Oregon Highway Plan (as amended)
- Oregon Bicycle and Pedestrian Plan (1995 and draft 2011)
- Oregon Freight Plan (2011)
- OAR Chapter 366 Division 215 (Freight Routes – Vehicle Carrying Capacity)
- OAR Chapter 734 Division 051 (Division 51)
- Highway Design Manual (HDM)
- Statewide Transportation Improvement Program (STIP)
- OR 42 Corridor Plan (2001)
- I-5 Interchanges 119 and 120 – Interchange Area Management Plan (2008)

1.1.1. Statewide Planning Goals

Since 1973, Oregon has maintained a strong statewide program for land use planning. The foundation of that program is a set of 19 statewide planning goals. Most of the goals are accompanied by guidelines, which are suggestions about how a goal may be applied. The goals express the state's policies on land use and related topics, such as citizen involvement, housing, and natural resources. Oregon's statewide goals are achieved through local comprehensive planning. State law requires each city and county to adopt a comprehensive plan, of which transportation system plans are a part, and the zoning and land-division ordinances needed to

put the plan into effect. The local comprehensive plans must be consistent with the Statewide Planning Goals. When the state's Land Conservation and Development Commission (LCDC) officially approve a local government's plan, the plan is said to be acknowledged. It then becomes the controlling document for land use in the area covered by that plan. Oregon's planning laws strongly emphasize coordination—keeping plans and programs consistent with each other, with the goals, and with acknowledged local plans. The goals that are most pertinent to transportation system planning, and therefore the OR 42 EMP, are described below.

Statewide Planning Goal 1 (Citizen Involvement)

Goal 1, Citizen Involvement, ensures the opportunity for all citizens to be involved in all phases of the planning process. The goal states that the stage agency or local government's citizen involvement program must be appropriate to the scale of the planning effort. The program must provide for continuity of citizen participation and of information that enables citizens to identify and understand the issues.

Project Relevance

Goal 1 requires federal, state, regional, and special district agencies to coordinate their planning efforts with the appropriate local governments and make use of existing local, established citizen involvement programs. *Development of the EMP will include a Technical Advisory Committee (TAC) and a Citizen Advisory Committee (CAC). There will be three TAC meetings, three CAC meetings and two public meetings.*

TAC members will consist of staff of each of the following: Douglas County, City of Winston, ODOT, Cow Creek Band of Umpqua Tribe of Indians, and Department of Land Conservation and Development (DLCD). The CAC will include members representing the general public, as well as local business and non-business interests. The CAC will be responsible for representing the public viewpoint in discussions regarding the EMP, reviewing and commenting on technical work, and disseminating information regarding the EMP to the community groups and interests they represent.

Key components of Goal 1 are:

- To provide for widespread citizen involvement. *The EMP CAC will be comprised of a cross section of affected citizens in the City of Winston and Douglas County.*
- To provide effective two-way communication with citizens. *Mechanisms shall be established to provide effective communication between citizens and the elected and appointed officials for the City of Winston and Douglas County area*.
- To provide the opportunity for citizens to be involved in all phases of the planning process. *A CAC meeting will be held during each phase of the project. Two public meetings will be held.*
- To assure technical information is available and provided in a user-friendly manner. *Policy decisions that affect citizens within the City of Winston and Douglas County shall*

be available in an easy to understand text and graphics that is made readily available to the public.

- To assure that policy makers provide feedback to citizens. *Citizens will receive direct feedback at the two public meetings. Citizen input will be incorporated into revised technical memoranda and the EMP, as appropriate.*

Statewide Planning Goal 2 (Land Use Planning)

Goal 2 outlines the basic procedures of Oregon's statewide planning program. Goal 2 also contains standards for taking exceptions to statewide goals. An exception may be taken when a statewide goal cannot or should not be applied to a particular area or situation.

Project Relevance

A land use planning process and policy framework must be established as a basis for all decisions and actions relating to the use of land. All local governments and state agencies involved in the land use action must coordinate with each other. *The EMP TAC will consist of representatives from Douglas County, City of Winston, ODOT, Cow Creek Band of Umpqua Tribe of Indians and DLCD. This memorandum serves as a policy framework for the development of the EMP. The Douglas County and City of Winston development codes have established planning processes for land use decisions.*

Land use decisions and actions must be supported by an "adequate factual base." Evidence must be provided that a reasonable person would find sufficient to support a finding of fact that a land use action complies with the applicable review standards. *The project will be thoroughly documented in technical memoranda that will contain an "adequate factual base". This is the first technical memorandum. The second technical memorandum defines the study area and the goals and objectives of the EMP. The third technical memorandum documents existing conditions such as land use conditions and transportation facilities. The fourth technical memorandum analyzes future conditions. The fifth memorandum evaluates alternatives. The EMP will consolidate information from the memoranda. Findings of fact are included in the records for Douglas County and City of Winston land use actions.*

City, county, state, and federal agency and special district plans and actions related to land use must be "consistent with the comprehensive plans of cities and counties and regional plans adopted under Oregon Revised Statutes (ORS) Chapter 268." *This memorandum establishes the policy and regulatory framework to guide the EMP planning process. The EMP may require county and/or city comprehensive plan amendments in order to incorporate facility improvements into the TSPs or add or amend policies to implement the EMP.*

Statewide Planning Goal 3 (Agricultural Lands)

Goal 3 defines "agricultural lands" and requires counties to inventory such lands and to preserve and maintain them by designating them for farm use.

Project Relevance

Portions of the EMP study area are designated and zoned as agricultural lands. A major task of the EMP is to complete an existing conditions analysis that summarizes the comprehensive plan and zoning designations, including any overlays, and the land uses allowed within each zoning district within the study area. The final plan will need to be consistent with Goal 3 if the preferred alternative includes acquisition of agriculture lands. EMP implementation measures will address consistency with designated agricultural lands and the allowed uses as described in ORS 215.243. and OAR 660-012-0065.

Statewide Planning Goal 4 (Forest Lands)

This goal defines forest lands and requires counties to inventory them and adopt policies and ordinances that will "conserve forest lands for forest uses."

Project Relevance

Areas zoned forest land by Douglas County are found in the EMP study area as identified further in this document and in Technical Memorandum #3 Existing Conditions. Improvements proposed in the EMP study area must comply with local jurisdiction policies, programs, and permitting that implement this goal. The EMP will be developed consistent with this goal.

Statewide Planning Goal 5 (Natural Resources)

The purpose of Goal 5, Natural Resources, Scenic and Historic Areas, and Open Spaces, is to "protect natural resources and conserve scenic and historic areas and open spaces." This goal requires local governments to inventory natural and cultural resources in their jurisdictions and to develop and adopt programs to conserve and protect them. Among the resources to be inventoried are: riparian corridors, wetlands, federal Wild and Scenic Rivers, state Scenic Waterways, groundwater resources, wildlife habitat, natural areas, wilderness areas, open spaces, scenic views and sites, mineral and aggregate resource areas, energy sources, and historic and cultural areas. If a resource or site is found to be significant, a local government has three policy choices: preserve the resource, allow proposed uses that conflict with it, or strike some sort of a balance between the resource and the uses that would conflict with it.

Project Relevance

Goal 5 resources on land in the study area are identified in Technical Memorandum #3 Existing Conditions. Improvements proposed in the EMP study area must comply with local jurisdiction policies, programs, and permitting that implement this goal. The EMP will be developed consistent with this goal.

Statewide Planning Goal 6 (Resources Quality)

This goal requires local comprehensive plans and implementing measures to be consistent with state and federal regulations on matters such as groundwater pollution.

Project Relevance

The EMP will be developed consistently with this goal. Improvements proposed in the Emp study area must comply with federal, state, city and county policies, programs, and permitting that implement this goal. The EMP will be developed consistent with this goal.

Statewide Planning Goal 7 (Natural Hazardous)

Goal 7 deals with development in places subject to natural hazards such as floods or landslides. It requires that jurisdictions apply "appropriate safeguards" (floodplain zoning, for example) when planning for development there.

Project Relevance

The EMP will be developed consistently with this goal. Goal 7 resources on land in the study area are identified in Technical Memorandum #3 Existing Conditions. Improvements proposed in the EMP study area must comply with city and county policies, programs, and permitting that implement this goal.

Statewide Planning Goal 9 (Economic Development)

The intent of Goal 9, Economic Development, is to “provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon’s citizens.” Local comprehensive plans and policies must support this goal and include policies addressing economic development and development opportunities. Plans must also identify an adequate supply of land with characteristics suitable for a variety of employment and economic development. Development should be limited around identified industrial sites to that which is compatible with uses allowed on the sites.

Project Relevance

The EMP will be developed consistently with this goal.

Statewide Planning Goal 11 (Public Facilities and Services)

Goal 11 calls for efficient planning of public services such as sewers, water, law enforcement, and fire protection. The goal’s central concept is that local governments should plan public services in accordance with its community’s needs and capacities rather than being forced to respond to development as it occurs.

Cities and counties must plan and develop a timely, orderly, and efficient arrangement of public facilities and services to serve as a framework for urban and rural development. The goal requires that urban and rural development be “guided and supported by types and levels of urban and rural public facilities and services appropriate for, but limited to, the needs and requirements of the urban, urbanizable and rural areas to be served.”

Project Relevance

The EMP will be developed consistently with this goal.

Statewide Planning Goal 12 (Transportation) and the Transportation Planning Rule

The goal requires cities, counties, metropolitan planning organizations (MPOs), and ODOT to provide and encourage a safe, convenient, and economic transportation system. This is accomplished through development of Transportation System Plans (TSPs) based on inventories of local, regional, and state transportation needs. Goal 12 is implemented through OAR 660, Division 12, also known as the Transportation Planning Rule (TPR).

The TPR requirement that local governments adopt consistent land use regulations "to protect transportation facilities, corridors and sites for their identified functions" (OAR 660-012-0045(2)) is achieved through a variety of measures, including:

- Access control measures, which are consistent with the functional classification of roads and consistent with limiting development on rural lands to rural uses and densities;
- Standards to protect future operations of roads;
- A process for coordinated review of future land use decisions affecting transportation facilities, corridors or sites;
- A process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities, corridors or sites;
- Regulations to provide notice to ODOT of land use applications that require public hearings, involve land divisions, or affect private access to roads; and
- Regulations ensuring that amendments to land use designations, densities, and design standards are consistent with the functions, capacities, and performance standards of facilities identified in the TSP. See also OAR 660-012-0060.

OAR 660-012-0065 identifies transportation improvements on rural lands which may be permitted on rural lands consistent with Goals 3, 4, 11 and 14 without requiring a goal exception. OAR 660-012-0070 exceptions for transportation improvements on rural lands apply if improvements do not meet OAR 660-012-0065 requirements. A local government approving a proposed exception shall adopt as part of its comprehensive plan findings of fact and a statement of reasons that demonstrate that the standards in this rule have been met.

The most recent amendments to the TPR were effective January 1, 2012. The amendments were in response to stakeholder concerns that transportation mobility took precedence over other critical community objectives such as increasing development intensities especially within urban centers. Below is a summary of the amendment provisions:

- If a proposed rezoning is consistent with the existing comprehensive plan map designation, and consistent with the acknowledged transportation system plan, then it can be approved without considering the effect on the transportation system. However, special provisions apply if the area was added to the urban growth boundary (UGB). If a proposed rezoning qualifies as economic development, then it can be approved without mitigating the full effect on traffic.

- When determining whether or not there is a "significant effect," transportation demand management – or any other enforceable, ongoing condition of approval that would reduce the amount of traffic generated – can be factored in to eliminate or diminish the significant effect.
- There are three new options for addressing a significant effect, including improvements to other modes, other facilities, and other locations. If the significant effect occurs on a state highway, then these options are only allowed with ODOT concurrence. If on a county road within a city, then county concurrence is required.

Project Relevance

The purpose of the OR 42 EMP is to allow officials to determine how best to improve and preserve the Expressway's mobility, safety, and operations along the corridor. Therefore, it meets the intent of Goal 12. The City of Winston and Douglas County TSPs are adopted as part of the acknowledged comprehensive plans; therefore the TSPs are in compliance with the TPR. The TSPs are discussed in the Local Jurisdiction section of this memorandum. The EMP will be developed to be consistent with the TPR including recent amendments.

Statewide Planning Goal 14 (Urbanization), and OAR 660, Division 14 and Division 22

This goal requires cities to estimate future growth and needs for land and then plan and zone enough land to meet those needs. It calls for each city to establish an urban growth boundary to identify and separate urbanizable land from rural land. Land uses permitted within the urban areas are more urban in nature and higher intensity than in rural areas, which primarily include farm and forest uses. It specifies seven factors that must be considered in establishing a UGB. It also lists four criteria to be applied when undeveloped land within a UGB is to be converted to urban uses. Compact development helps contain the costs of public facilities such as transportation and helps jurisdictions better anticipate where growth will occur.

Project Relevance

The location, type, and intensity of development within the study area will impact use of the Expressway and could affect future use and operation of the Expressway. The EMP will be developed consistently with Goal 14.

1.1.2. Oregon Transportation Plan (2006)

The Oregon Transportation Plan (OTP) is the state's long-range multimodal transportation plan. The OTP considers all modes of Oregon's transportation system as a single system. The current OTP assesses state, regional, and local public and private transportation facilities through 2030. The OTP establishes goals, policies, strategies, and initiatives that address the core challenges and opportunities facing Oregon. It also provides the framework for prioritizing transportation improvements based on varied future revenue conditions.

Goal 1 – Mobility and Accessibility

Policy 1.1 – Development of an Integrated Multimodal System: It is the policy of the State of Oregon to plan and develop a balanced, integrated transportation system with modal choices for the movement of people and goods.

Policy 1.2 – Equity, Efficiency and Travel Choices: It is the policy of the State of Oregon to promote a transportation system with multiple travel choices that are easy to use, reliable, cost-effective and accessible to all potential users, including the transportation disadvantaged.

Policy 1.3 – Relationship of Interurban and Urban Mobility: It is the policy of the State of Oregon to provide intercity mobility through and near urban areas in a manner that minimizes adverse effects on urban land use and travel patterns and provides for efficient long distance travel.

Goal 2 – Management of the System

Policy 2.1 - Capacity and Operational Efficiency: It is the policy of the State of Oregon to manage the transportation system to improve its capacity and operational efficiency for the long-term benefit of people and goods movement.

Policy 2.2 - Management of Assets: It is the policy of the State of Oregon to manage transportation assets to extend their life and reduce maintenance costs.

Goal 3 – Economic Vitality

Policy 3.1 – An Integrated and Efficient Freight System: It is the policy of the State of Oregon to promote an integrated, efficient, and reliable freight system involving air, barges, pipelines, rail, ships, and trucks to provide Oregon a competitive advantage by moving goods faster and more reliably to regional, national, and international markets.

Policy 3.2 – Moving People to Support Economic Vitality: It is the policy of the State of Oregon to develop an integrated system of transportation facilities, services, and information so that intrastate, interstate, and international travelers can travel easily for business and recreation.

Policy 3.3 – Downtowns and Economic Development: It is the policy of the State of Oregon to provide transportation improvements to support downtowns and to coordinate transportation and economic development strategies.

Goal 4 – Sustainability

Policy 4.1 – Environmentally Responsible Transportation System: It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources.

Policy 4.3 – Creating Communities: It is the policy of the State of Oregon to increase access to goods and services and promote health by encouraging the development of compact communities and neighborhoods that integrate residential, commercial, and employment

land uses to help make shorter trips, transit, walking, and bicycling feasible, and that integrate features that support the use of transportation choices.

Goal 5 – Safety and Security

Policy 5.1 – Safety and Security: It is the policy of the State of Oregon to continually improve the safety and security of all modes and transportation facilities for system users including operators, passengers, pedestrians, recipients of goods and services, and property owners.

Policy 5.2 – Security: It is the policy of the State of Oregon to provide transportation security consistent with the leadership of federal, state, and local homeland security entities.

Goal 7 – Coordination, Communication and Cooperation

Policy 7.1 - A Coordinated Transportation System: It is the policy of the State of Oregon to work collaboratively with other jurisdictions and agencies with the objective of removing barriers so the transportation system can function as one system.

Policy 7.3 – Public Involvement and Consultation: It is the policy of the State of Oregon to involve Oregonians to the fullest practical extent in transportation planning and implementation in order to deliver a transportation system that meets the diverse needs of the state.

Policy 7.4 – Environmental Justice: It is the policy of the State of Oregon to provide all Oregonians, regardless of race, culture or income, equal access to transportation decision-making so all Oregonians may fairly share in benefits and burdens and enjoy the same degree of protection from disproportionate adverse impacts.

Project Relevance

The development of the OR 42 EMP is integral to maintaining the highway facility and optimizing system performance. Transportation improvements must be consistent with the OTP. Therefore, findings of compatibility with these OTP goals and policies will be part of the EMP adoption package.

1.1.3. Oregon Highway Plan (as amended)

The 1999 Oregon Highway Plan (OHP) establishes policies and investment strategies for Oregon's state highway system over a 20-year period and refines the goals and policies found in the OTP. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity, partnerships with other agencies and local governments, and the use of new techniques to improve road safety and capacity. These policies also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and local road, bicycle, pedestrian, transit, rail, and air systems.

The function of the Expressway is determined by regional mobility and access needs and by the state and local designations. These designations define the Expressway within the context of the local, regional, and statewide transportation network. OR 42 is a statewide highway that

also serves as the Freight Route from the US 101/OR 42 intersection in Coos County to I-5 Exit 119 interchange in Douglas County. The OR 42 Expressway begins at Lookingglass Road (Mile point 73.88) and ends at I-5 Exit 119 (Mile Point 77.17).

The OHP describes the designations as the following:

- Congress established the **National Highway System (NHS)** of statewide and interstate highways and intermodal connectors in the National Highway System Designation Act of 1995. The OHP has adopted the National Highway System as the primary classification --- all the Interstate and Statewide Highways and Access Oregon Highways except for Oregon Highway 82 are in the NHS.
- The **State Classification System** has four levels of importance (Interstate, Statewide, Regional and District) to guide management and investment decisions regarding state highway facilities.
- **Statewide Highways** typically provide inter-urban and inter-regional mobility and provide connections to larger urban areas, ports, and major recreation areas that are not directly served by Interstate Highways. A secondary function is to provide connections for intra-urban and intra-regional trips. The management objective is to provide safe and efficient, high-speed, continuous-flow operation. In constrained and urban areas, interruptions to flow should be minimal. Inside Special Transportation Areas (STAs), local access may also be a priority.
- **Expressways** are a subset of the state classification system that provide for high speed, high volume travel between cities and connections to ports and major recreation areas with minimal interruptions. A secondary function is to provide for long distance intra-urban travel in metropolitan areas. In urban areas, speeds are moderate to high. In rural areas, speeds are high. On Expressways, existing approach roads are eliminated as opportunities occur or alternate access becomes available; access rights are purchased and a local road network may be developed consistently with the function of the roadway; public road connections are highly controlled; traffic signals are discouraged in rural areas; non-traversable medians are encouraged; and parking is prohibited.
- The primary purpose of the **State Highway Freight System** is to facilitate efficient and reliable interstate, intrastate, and regional truck movement through a designated freight system. This freight system includes routes that carry significant tonnage of freight by truck and serve as the primary interstate and intrastate highway freight connection to ports, intermodal terminals, and urban areas.

The OHP policies applicable to the EMP are:

Goal 1 – System Definition

<u>Policy 1A – State Highway Classification System</u>: Establishes that the management objective of Interstate Highways is to provide for safe and efficient, high-speed, continuous-flow operation in urban and rural areas; and for District Highways, to provide for safe and

efficient, moderate to high-speed continuous-flow operation in rural areas and moderate to low-speed operation in urban and urbanizing areas.

Policy 1B – Land Use and Transportation: Recognizes the need for coordination between state and local jurisdictions.

Policy 1C – State Highway Freight System: States the need to balance the movement of goods and services with other uses of the highway system, and to recognize the importance of maintaining efficient through movement on major truck freight routes.

Police 1E – Lifeline Routes: Recognizes the need for a secure lifeline network of streets, highways, and bridges to facilitate emergency services response and to support rapid economic recovery after a disaster.

Policy 1F – Highway Mobility Standards: Sets mobility standards for ensuring a reliable and acceptable level of mobility on the highway system based on highway classification and location by providing the appropriate standards that would allow the corridor area and associated interchanges to function in a manner consistent with OHP mobility standards.

Policy 1G – Major Improvements: Requires maintaining performance and improving safety by improving efficiency and management before adding capacity.

Goal 2 – System Management

Policy 2A – Partnerships: Establishes cooperative partnerships to make more efficient and effective use of limited resources to develop, operate, and maintain the highway and road system.

Policy 2B – Off-System Improvements: Helps local jurisdictions identify and evaluate off-system improvements that would be cost-effective in improving performance of the state highway.

Policy 2E – Intelligent Transportation Systems: Considers services to improve system efficiency and safety through effective incident management, en-route driver information, and traffic control.

Policy 2F – Traffic Safety: Improves the safety of the highway system.

Policy 2G – Rail and Highway Compatibility: States the need to increase safety and transportation efficiency through the reduction and prevention of conflicts between railroad and highway users.

Goal 3 – Access Management

Policy 3A - Classification and Spacing Standards: Manages the location, spacing and type of road and street intersections and approach roads on state highways to assure the safe and efficient operation.

Policy 3C - Interchange Access Management Areas: Establishes plans for grade-separated interchange areas to protect the function of interchanges, provide safe and efficient operations between connecting roadways, and minimize the need for major improvements of existing interchanges.

Goal 4 – Travel Alternatives

Policy 4A – Efficiency of Freight Movement: Seeks to balance the needs of long distance and through freight movements with local transportation needs on highway facilities in both urban and rural areas.

Policy 4D – Transportation Demand Management: Supports the efficient use of the state transportation system through investment in efforts that reduce peak period congestion.

Goal 5 – Environmental and Scenic Resources

Policy 5A: Environmental Resources: Seeks to maintain or improve the natural and built environment where affected by ODOT facilities.

In addition to policies, the OHP provides interchange spacing requirements, investment priorities, access management policy, and mobility targets. The OHP mobility standards for different highway categories use volume-to-capacity ratios (v/c) to measure performance and can be found in OHP Appendix A. Access spacing standards are listed OHP Appendix C.

On March 21, 2012, the OTC adopted changes to the OHP to address Senate Bill 264. As part of the adopted changes, OHP Policy 1F is expanded to not only implement and balance other OHP policies, but to also better weigh the policy objectives in the multimodal Oregon Transportation Plan, as well as community objectives for economic development, community development and livability. The policy revisions change the term "mobility standards" to "mobility targets" as a way to improve implementation and flexibility of the mobility policy in consideration of other state, regional and local objectives.

Project Relevance

The OHP establishes the state highway classification system to guide ODOT priorities for system investment and management. In addition, the OHP provides interchange spacing requirements, investment priorities, access management policy, and mobility standards. The OHP mobility standards for different highway categories use volume-to-capacity ratios (v/c) to measure performance. Appendix A in the OHP states the standards. Access spacing standards for interchanges are listed in Tables 16-19 of OHP Appendix C.

A TAC will provide technical and policy guidance during preparation of the EMP. The TAC will include representatives from Douglas County, the City of Winston, ODOT, Cow Creek Band of Umpqua Tribe of Indians, and Department of Land Conservation and Development (DLCD). The preferred alternative will be assessed consistent with the amended OHP performance standards for a Statewide Expressway.

The EMP will be adopted into the Oregon Highway Plan by the Oregon Transportation Commission, the board that oversees the Oregon Department of Transportation. The City of Winston and Douglas County will provide plan compatibility findings with the EMP. If applicable, components of the EMP will be adopted into the City's and County's Transportation System Plans.

1.1.4. Oregon Bicycle and Pedestrian Plan (1995 and draft 2011)

The Oregon Bicycle and Pedestrian Plan (OBPP) was originally prepared in 1995 to implement the Actions recommended by the OTP; guide ODOT and local governments in developing bikeway and walkway systems; explain the laws pertaining to the establishment of bikeways and walkways; fulfill the requirements of the TPR; and provide standards for planning, designing, and maintaining bikeways and walkways. The 1995 OBPP states that state highways and county roads provide good opportunities for long distance touring and shorter recreational rides.

In terms of improvement priorities, the 1995 OBPP states that sections of rural highways that link schools, parks, residential areas, and other trip generators to the nearest urban area will receive high consideration. Strategy 1A is intended to provide bikeway and walkway systems that are integrated with other transportation systems. On rural highways, this policy requires integration of bicycle and pedestrian facility needs into all ODOT and local government planning, design, construction, and maintenance activities.

In the 1995 plan, Map 1: Conditions for bicyclists on rural highways, identifies OR 42 in the study area has having shoulders of 4 feet or wider. Wide shoulders are considered suitable for bicycling if traffic volumes are not too high.

The OBPP is currently being updated and is expected to be adopted by the OTC in 2011. The draft document, currently available online[1], focuses on the importance of good design and understanding the context of facilities. The document includes chapters addressing on-road bikeways, restriping, bicycle parking, walkways, street crossings, intersections, shared-use paths. Both standards and minimums are recommended in the manual along with innovative designs that have been implemented successfully in Oregon or other parts of the county.

Project Relevance

The standards of the draft Oregon Bicycle and Pedestrian Plan will be integrated into the EMP as required.

1.1.5. Oregon Freight Plan (2011)

The purpose of the Oregon Freight Plan is to improve freight connections to local, state, tribal, regional, national and international markets with the goal of increasing trade-related jobs and income for Oregon workers and businesses. The plan documents the economic importance of freight movement in Oregon, identifies transportation networks important to freight-dependent industries and recommends multimodal strategies to increase strategic freight system efficiency. The plan identifies sixteen freight issues and strategies with action steps to address the issues.

[1] http://www.oregon.gov/ODOT/HWY/BIKEPED/planproc.shtml

Table 4.4 identities OR 42 as a facility providing connectivity to move goods to and from market. Specifically, it connects the Port of Coos Bay with I-5. The study area is in the Western Freight Corridor of the state. According to the Freight Plan, the Western Freight Corridor contains some of the major intermodal facilities in the state, which move both heavy and valuable goods to markets around the world. Transportation facilities area also identified as necessary to support resource based industries as those found in the study area and the area surrounding the study area. Additionally, the plan states that agriculture, forestry and fishing related shipments are expected to grow at a high rate of around 2.1 percent annually through 2035. OR 42 is a Freight Route from the US 101/OR 42 intersection in Coos County to I-5 Exit 119 interchange in Douglas County.

Project Relevance

Maintaining and enhancing freight system efficiency in accordance with the OR 42 Freight Route designation will be integrated into the EMP in establishing goals and objectives, identifying deficiencies, and developing recommended projects.

1.1.6. OAR Chapter 366 Division 215 (Freight Routes – Vehicle Carrying Capacity)

ORS 366.215 states the Oregon Transportation Commission may not permanently reduce the vehicle-carrying capacity of an identified freight route. Specific exceptions to this prohibition are allowed by statute. Local and regional agencies conducting planning, design or project development on state highways should contact a highway region office to initiate the ORS 366.215 review.

Project Relevance

The EMP will meet the requirements and go through the approval process to meet the requirements of the OAR including coordination and review with freight stakeholders.

1.1.7. 2001 Oregon Rail Plan

The Oregon Rail Plan is a modal element of the OTP. It is intended to implement the OTP's long-range vision of a viable freight and passenger rail system in Oregon. The Oregon Rail Plan is a comprehensive assessment of the state's rail planning, freight rail, and passenger rail systems. The Oregon Rail Plan identifies specific policies and planning processes concerning rail in the state, including minimum level of service standards for statewide freight and passenger rail systems. The freight element describes existing conditions in the different regions of the state and improvements that are needed. It also identifies issues that should be considered in rail planning during local land use planning like preparation of a TSP and comprehensive plan policies to support the TSP.

To meet the goals of the OTP, service standards for minimum levels of service are specified for each freight service. These minimum levels of service pertain to intermodal freight and ports, highway freight and rail freight. Specifically, they call for the following:

- Connections to deep draft ports should be available under open access terms to all major railroads and trucking lines in the nearby vicinity of maritime port terminals where feasible (e.g. Astoria, Portland, Coos Bay and Newport).
- To the extent possible, major intermodal rail/truck facilities should exist on rail main lines with a service area radius of 150 miles (e.g. Portland, Eugene, Klamath Falls, Umatilla/Boardman, and Ontario). Intermodal reload facilities are to be encouraged at other locations, as the market demands (e.g. Medford, Bend/Redmond, Salem, Baker City, and La Grande, and coastal ports)
- Ports and port systems handling substantial quantities of international and national freight (more than 3 million tons) should have multimodal connections, be able to operate in the international marketplace and have access to rail freight service (e.g. the lower Columbia River and Coos Bay).
- Highway freight accessing intermodal truck/rail terminals or moving within Oregon should experience level of service C or better on Oregon highways during off-peak periods (e.g. Portland, Eugene, Medford, Klamath Falls, and Umatilla/Boardman).
- Branch rail lines within Oregon should be maintained to allow a minimum speed of operation of 25 miles per hour whenever upgrading can be achieved with a favorable cost-benefit ratio.
- Rail main lines within Oregon should provide convenient ramp, terminal and reload facilities for transfers from truck to rail for long haul movement of freight. High quality highway access should be provided to these sites. Priority right-of-way should be preserved for potential public use or ownership when abandonment proceedings are initiated (e.g. corridors where there are future alternative uses, especially near expanding urban area).
- Reload facilities should be encouraged and, if warranted, supported where they provide the most cost efficient and environmentally effective response to branch line abandonment.

The primary railroad serving southwestern Oregon is the Central Oregon & Pacific Railroad (CORP), whose main line (Siskiyou Line) runs south from Eugene through Medford.

The following policies and actions are applicable to planning for the Corridor:

<u>Policy 1</u>: Increase economic opportunities for the State by having a viable and competitive rail system.

- <u>Action 1:</u> Stabilize and improve Oregon's access to the national rail system by maintaining a competitive environment for rail customers, assuring a level playing field for each mode, and assisting in removing capacity restraints.
- <u>Action 2</u>: Promote intermodal centers where freight may be interchanged between rail and other modes by identifying suitable locations with adequate potential volumes and, if necessary, funding rail improvements and providing adequate highway access.

Policy 2: Strengthen the retention of local rail service where feasible.

- Action 1: Where necessary, seek alternative ownership and/or operation of rail facilities in order to preserve service.
- Action 2: Encourage increased use of rail service by promoting rail service opportunities, providing a wide range of intermodal facilities, and assisting localities and rail users to understand railroad economics, revenue needs of individual lines, and land use requirements.
- Action 3: Utilize federal or state funds for rail service continuation assistance where appropriate. Preference should be given to those lines that upon analysis have a positive benefit over cost ratio and will not require public assistance for ongoing operations.

Policy 4: Integrate rail freight considerations into the State's land use planning process.

- Action 1: Recognize the social, economic and environmental importance of rail freight service.
- Action 2: Encourage land use zoning and ordinances that enhance and protect existing rail freight service.
- Action 3: Work with communities to minimize conflicts between railroad operations and other urban activities.
- Action 4: Assist in removing constraints to improved railroad operating efficiency within urbanized areas. Work with communities to consolidate or close existing grade crossings and prevent the establishment of unjustifiable new grade crossings.
- Action 5: Encourage local jurisdictions to identify alternative uses for low-density branch line rights-of-way.

Project Relevance

The EMP will consider the needs of the rail freight system throughout project development.

1.1.8. OAR Chapter 734 Division 051 (Division 51)

The Access Management Administrative Rule (OAR 734-051) applies to the location, construction, maintenance, and use of approaches onto the state highway rights-of-way and properties under the jurisdiction of ODOT. These rules also govern closure of existing approaches, spacing standards, medians, deviations, appeal processes, grants of access, and indentures of access. OAR 734-051 governs the permitting, management, and standards of approaches to state highways to ensure safe and efficient operation of the state highways and address the following:

- The ways to bring existing and future approaches into compliance with access spacing standards, and ensure the safe and efficient operation of the highway
- The purpose and components of an access management plan
- The requirements regarding mitigation, modification, and closure of existing approaches as part of project development

These rules set access management spacing standards for all new construction or reconstruction projects on state highways and include provisions for closure of existing approaches. The rules also establish requirements for interchange access spacing as part of an interchange area management plan and allow for development of access management plans along state highways.

The Oregon Transportation Commission approved new administrative rules for access management on state highways that took effect on Jun 29, 2012. These rules implement Senate Bill 264 statutory requirements signed into law in June 2011. The bill reflects the work of a collaborative stakeholder committee in response to legislative direction to "codify, clarify, and bring consistency to issuance of access permits based on objective standards."

Project Relevance

The EMP will evaluate existing approaches and may include recommendations for changing access, where appropriate, consistent with the Expressway designation and OAR 734 051 including any recent amendments.

1.1.9. Highway Design Manual (HDM)

The HDM provides design standards for state highways and associated highway elements. These standards are dependent on the highway's functional classification and project type (e.g., Modernization, Preservation, Safety, Operations, or Maintenance). The purpose of the HDM is to establish mobility standards when evaluating potential design configurations.

Project Relevance

The EMP alternatives will be developed to be consistent with the applicable HDM Standards for an Urban Expressway.

1.1.10. Statewide Transportation Improvement Program (STIP)

The Statewide Transportation Improvement Program, known as the STIP, is Oregon's four-year transportation capital improvement program. It is the document that identifies the funding for, and scheduling of, transportation projects and programs. It includes multimodal projects (highway, passenger rail, freight, public transit, bicycle, and pedestrian) projects on the federal, state, city, and county transportation systems, and projects in the National Parks, National Forests, and Indian tribal lands.

The 2010-2013 approved STIP lists an OR 42 Expressway Upgrade (Key no. 15006) for mileposts 74.10 to 74.77 which is in the EMP study area. The cost of the project is listed as $1,200,000. The project is described as "Signalize Rolling Hills Road; close two public streets; close private approaches near signal," with construction scheduled to begin in 2012.

The draft 2012-2015 STIP was released in May 2011. There are no additional projects (beyond Key no. 15006) listed in the current version available online[2]. Because this is a draft document, information included (i.e., project descriptions, cost estimates, and construction schedules) could change. The Final STIP has an estimated approval date of April 2012.

Project Relevance

The EMP will assume the project listed in the 2010-2013 STIP is constructed as part of the future baseline conditions.

1.1.11. OR 42 Corridor Plan (2001)

The purpose of the plan is to establish ODOT's management direction for the operation of the Highway 42 facility. The plan contains long-term programs for management and improvements of the corridor.

The overall management focus for the corridor is to balance the following:

- **Safety**. ODOT is charged with ensuring the traveling public is provided a safe and efficient transportation system.
- **Freight movements and economic development**. In serving as a primary link between the South Coast and I-5 corridor, the freight function of the OR 42 corridor must be protected and enhanced. Specifically, maintaining travel times and highway capacity will ensure efficient freight movement and therefore support the regional economy.
- **Local transportation needs**. The highways will continue to serve as Main Street or as primary arterials in the communities along the corridor. Providing access to local land uses and adequate pedestrian facilities will continue to be a consideration in the operation of both facilities.

For the study area, improvements to Lookingglass Road and other eastside local streets connections to OR 42 are encouraged to protect the capacity of OR 42. Strengthening connections in the Green UUA is also identified as a means to protect to capacity and operations of the highway.

Table E-6 includes a list of planned and recommended projects and priorities by funding type. Those projects within the OR 42 EMP study area are listed below along with comments *in italics* highlighting which elements of the projects have or have not been implemented:

- **Safety Project #65: Lookingglass Road Intersection Right Turn (Milepoint 73.88)** – Create westbound right turn refuge to keep slowing vehicles from being overtaken in travel lane – Medium Priority. *A 200-foot long westbound right-turn lane is located at this intersection.*

[2] http://www.oregon.gov/ODOT/HWY/STIP/docs/2012-2015_STIP/Draft12-15STIP.pdf

- **Safety Project #74: Kelly's Corner (Milepoint 75.72)** – Replace signal hardware & adjust phasing; Add left turn lanes on local roads, right turn lanes from OR 42 to local roads; Improve vertical curve on local legs; Move signs; Consolidate accesses on local roads; Replace intersection asphalt with concrete – High Priority. *Most of these improvements have been implemented with the exception of the eastbound right-turn lane on OR 42 and the concrete pavement.*
- **Safety Project #73: Grange Road Access (Milepoint 75.53)** – Delineate left and right turn lanes on local street; Add right turn lane from OR 42 onto local street; In future, evaluate closing access and improving connections between Grange Road and Roberts Creek Road and Rolling Hills Road – Medium Priority. *Access is still open, no local street turn lanes have been delineated and the right-turn lane on OR 42 have not been constructed.*
- **Safety Project #69: Helweg Road Intersection (Milepoint 74.34)** – Close Helweg Road intersection; Create frontage road connecting with OR 42 across from Pepsi Road – Low Priority. *Helweg Road is still open.*
- **Safety Project # 76: Grant Smith Road (Milepoint 76.22)** – Add additional left-turn lane from OR 42 to Grant Smith Road at full development of surrounding area. *Current configuration includes traffic signal with left-turn lanes on the approach of OR 42 at Grant Smith Road.*
- **Maintenance Project #67: Lookingglass Road to I-5 (Milepoint 73.89 to 76.50)** – Plant trees along OR 42 between Winston and I-5 to enhance esthetics; right-of-way width provides space to plant trees away from roadway – Low Priority. *No trees beyond existing vegetation have been planted.*
- **Local Coordination Project #67: Winston Section Road and Pepsi Road intersections (Milepoint 74.19 to 74.35)** – Close Winston Section Road intersection and divert traffic to Pepsi Road; Improve Pepsi Road to handle additional traffic – High Priority. *Winston Section Road still connects with OR 42.*
- **Local Coordination Project #71: Rolling Hills Road intersection and off-system improvements (Milepoint 74.77 to 75.42)** – Extend Rolling Hills Road north to Happy Valley Road; Create frontage road between Rolling Hills Road and Jackie Avenue and close all accesses between Rolling Hills and Landers; Signalize intersection once warranted and when local roads are built – High Priority. *Rolling Hills Road connects to Harmony Drive which connects to Jackie Avenue. Accesses along OR 42 between Rolling Hills Road and Landers Avenue are still present because there is no frontage road to provide alternate access. A STIP project (Key no. 15006) will signalize the Rolling Hills Road intersection with OR 42 and implement several other access improvements.*
- **Local Coordination Project #64: Winston off-system improvements – West and East side connections (Milepoint 72.65 to 74.88)** – Improve off-system connections from Lookingglass Road and OR 42 to encourage local traffic away from the highway; Improve connection between east Winston and Winston Section Road – Low Priority. *This project is consistent with improvements in the Winston Transportation System Plan, which has not been implemented.*

In addition to these projects, two planning projects were identified including an update to the transit feasibility study for the Winston/Green/Roseburg area and this EMP.

Project Relevance

The EMP goals and objectives will be developed based on the three Highway 42 Corridor Plan overall management objectives. The EMP will evaluate the projects within the EMP study area that are listed in the Plan but have not yet been implemented.

1.1.12. I-5 Interchanges 119 and 120 – Interchange Area Management Plan (2008)

The Interchange Area Management Plan (IAMP) for I-5 Interchanges 119 and 120 was completed in 2008 and has been adopted by the OTC and Douglas County. Interchange 119 connects I-5 with OR 42 at the eastern edge of the EMP study area.

Problem Statement

The IAMP identifies that the interchanges and roadways in the immediate area have significant operational, geometric, access, and structural deficiencies. Specific issues in the OR 42 EMP study area include:

- The intersection of OR 42 with Old Highway 99 South / Grant Smith Road has operational problems and excessive vehicular queuing resulting from high peak hour traffic volumes and lane imbalance on the eastbound approach. The lane imbalance is caused by the intersection's close proximity to the Interchange 119 ramp split, which is located less than 1,000 feet downstream from the intersection. With 85 percent of vehicles subsequently heading to the northbound I-5 ramps from the left lane, most vehicles queue in the left approach lane at the intersection.
- Traffic operations at the intersection of OR 42 at Carnes Road / Roberts Creek Road currently exceed the ODOT mobility standards. Conditions are expected to worsen, with the intersection approaching capacity under year 2025 traffic volume conditions.
- A safety analysis indicated few existing safety problems within the planning and management area other than those already noted. The intersection of OR 42 at Carnes Road does have a somewhat elevated crash rate when compared to the surrounding area.

Goals and Objectives

The IAMP includes the goal "to develop a plan for improvements that can be implemented over time to:

- Improve safety and operations of Interchanges 119 and 120 and the I-5 mainline in the vicinity of these two intersections;
- Protect the investment in I-5 and its interchanges and maintain the function of the interchanges;

- Provide better accessibility to Roseburg, Winston, and the Green Area consistent with the adopted local comprehensive land use and transportation plans; and
- Maintain a system interchange between OR 42 and I-5 that allows free movements for all directions of travel.

This goal is supported by objectives, including one objective focused on "recognizing the importance of maintaining a system interchange between OR 42 and I-5".

Preferred Alternative

The IAMP contains a Preferred Alternative with targeted improvements focused maximizing the use of the existing system without significant roadway or interchange realignments. The Preferred Alternative includes nine individual projects which could be implemented concurrently or in phases. Those projects within the OR 42 EMP study area are listed below along with comments *in italics* highlighting which elements of the projects have or have not been implemented:

- **OR 42 at Interchange 119**: Provide two eastbound lanes on the new OR 42 bridge over I-5. *ODOT is planning on moving forward with this project in the near future.*
- **Kelly's Corner (OR 42 at Carnes Road)**: Construct dual left-turn lanes on the southbound, eastbound and westbound approaches. *This project has not yet been constructed.*
- **OR 42 Expressway Upgrade (2008-2011 STIP, KN 15006)**: Construct a signal on OR 42 at Rolling Hills Road; Construct a Necessary Local street; Close two street connections and eliminate private access. *This project is currently programmed for 2012 in the 2010-2013 STIP.*
- **Local Street Network Improvements**: Complete Rolling Hills Road between OR 42 and Happy Valley Road and develop east-west street network as indicated in the Green TSP. *These projects have not yet been constructed.*

Project Relevance

The EMP will evaluate the projects within the EMP study area that are listed in the Plan but have not yet been implemented.

1.2. Local Plans and Ordinances

The following local planning documents were reviewed: City of Winston Zoning and Douglas County Zoning for the Green UUA are shown in Figure 1-2.

- City of Winston Comprehensive Plan (2003)
- City of Winston Land Use and Development Ordinance (2009)
- City of Winston Transportation System Plan (2003)
- Douglas County Comprehensive Plan (2010)
- Douglas County Transportation System Plan (1998) and Amendments (2001)

- Green Urban Unincorporated Area Transportation System Plan (2001)
- Douglas County Land Use and Development Ordinance (2010)
- Douglas County Coordinated Public Transit Human Services Transportation Plan (2009)

1.2.1. City of Winston Comprehensive Plan (2003)

This City of Wilson Comprehensive Plan was developed to chart the community's future growth through the year 2022. It anticipates the community's future needs and concerns and presents actions to deal with them.

Goals and Policies applicable to planning for the EMP are excerpted below.

NATURAL FEATURES:

Goal B: To prevent inappropriate development in natural hazard areas.

Policy 1: Require that plans for construction in areas of potential slope or soil hazard be reviewed and signed by a licensed engineering geologist.

Policy 2: Floodways shall be protected from encroachment by the provisions of the Zoning Ordinance.

Policy 3: Development within the "flood fringe" shall be strongly discouraged and subject to the provisions of the City's "Floodplain Ordinance."

Policy 4: Areas immediately outside the City's Urban Growth Boundary but within the floodplain should be discouraged from further development. The City shall comply with all applicable State and Federal environmental regulations.

Goal C: To protect Winston's environment by conserving vegetation, wildlife and water resources.

Policy 1: Winston shall protect the South Umpqua River, Lookingglass Creek, Applegate Creek, and Brockway Creek within its UGB by controlling the removal of riparian vegetation along their watercourses.

ECONOMY:

Goal B: To strengthen Winston's economy by stimulating commerce.

Policy 3: Support a scenic corridor from I-5 through Green to the Wildlife Safari and continuing throughout the City of Winston on Highway 42 and County Road 387 to the south to Exit 112 on I-5 and Hwy 42 to the west. Such a corridor should involve landscaping the rights-of-ways, as well as trying to improve or screen the appearance of existing uses, and ensure that proposed uses, other than homes, are developed with a regard for aesthetics from the highway.

Goal C: To retain agricultural lands for agricultural uses.

Policy 1: Maintain the agricultural land base in order to continue and enhance the agricultural productivity of the area.

PUBLIC FACILITIES AND SERVICES

Goal C: To improve Winston's street system, in order to provide a smoother traffic flow and increased safety.

Policy 1: Upgrade the city streets as identified in Public Facilities Plan.

Policy 2: The City shall work with the Oregon State Department of Transportation and Douglas County to improve the transportation system in the City consistent with the goals and policies of this plan, the Public Facilities Plan and the Transportation System Plan with regards to projects planned within the city limits or the Urban Growth Boundary.

Policy 3: Encourage Douglas County and Oregon Department of Transportation to improve the streets below, as soon as funds become available in the following order of priority: 1) Winston Section Road; 2) County Road 387 south of the city limits through Dillard.

Policy 4: Limit access points to arterial streets from adjoining property to better define and channel traffic movement.

Policy 5: Initiate studies to develop a plan for improving access to the area east of Highway 42 in Winston.

Goal D: To promote energy conservation by encouraging alternative forms of transportation.

Policy 2: Encourage the placement of sidewalks along arterials and collectors as identified in the Transportation System Plan as funds become available.

Policy 3: Foster the development of an area-wide pedestrian/bicycle path network to provide and alternative circulation system to the existing street network.

LAND USE WINSTON

Goal A: To ensure that the development of Winston is properly phased and orderly, such that urban sprawl is avoided and livability is enhanced.

Policy 4: Continue to implement the local street network plan, which developed an overall circulation system which includes pedestrian and bike paths linking all residential areas of the city with activity centers, both existing and proposed. The street network should be closely coordinated with future land use designations to avoid conflicts.

Policy 5: Access should be very limited onto arterial streets. Only commercial or residential development that can be buffered from street noise and pollutants should be permitted along arterials. Access points onto collectors should also be kept to a minimum.

Policy 6: Land outside the Urban Growth Boundary should continue as rural residential or agricultural in use.

Project Relevance

Upon completion of the EMP, the city may need to adopt the EMP as a policy and implementation document before ODOT can present the EMP to the OTC for adoption. Therefore, the EMP and Comprehensive Plan must be consistent or amended to be made consistent.

1.2.2. City of Winston Land Use and Development Ordinance (2009)

The City of Winston Land Use and Development Ordinance establishes zones to regulate the use of land and structures in the City of Winston. Zoning maps for the City of Winston are only available at city hall due to their size. However, zoning within the study area was provided by Douglas County, and is illustrated in Figure 1-2. Applicable zoning sections include:

- Section 4.010. Agriculture/Open Space (A-O)
- Section 4.020. Residential Low Density Zone (R-L)
- Section 4.040. Residential High Density Zone (R-H)
- Section 4.130. Highway - Commercial Zone (C-H)
- Section 4.140. General Commercial (C-G)

None of the zones have standards or mention transportation improvements.

Additional standards that likely apply to the study area include:

- Section 4.400. Purpose: This Steep Slopes Overlay Zone (SSO) is intended to ensure that any development, land use application, or division (partition or subdivision) on lands of steep or hazardous slopes is done without causing danger to life or property either on or adjacent to such development, land use application, or division of land.
- Article 6. Floodplain Development
- Article 14. Historic Structures or Sites

Access for development proposals is managed through SECTION 5.010. Access which does not include notification and opportunity to comment by interested agencies during the permitting process for of development proposals by interested agencies.

Project Relevance

Upon completion of the EMP, the city may need to adopt the EMP as a policy and implementation document before ODOT can present the EMP to the OTC for adoption. Therefore, the EMP and Zoning Ordinance must be consistent or amended to be made consistent. EMP corridor planning will consider land uses and land use designations adjacent to the corridor and their effect on transportation facilities. Projects recommended in the EMP will require city development permits in the design and construction phase.

1.2.3. City of Winston Transportation System Plan (2003)

This Winston TSP is a summary of the past transportation planning efforts and current Comprehensive Plan Periodic Review program activities underway for the City of Winston. The TSP proposes undertaking changes in the local street system to decrease dependence on OR 42 and Old Highway 99 for local traffic circulation.

Growth Assumptions

The TSP was prepared based on the following growth assumptions:

- Population and employment figures would represent increases of approximately 27 percent between 1997 and year 2020.
- Daily traffic generated by new development would represent an increase estimated at 35 percent over current traffic volumes.

Deficiencies

The TSP summarizes existing operations and concludes that

> "With the exception of the Lookingglass Road intersection, all inventoried intersections are expected to operate within acceptable levels through the planning horizon of this TSP. Because of the high volumes of traffic on Highway 42, Lookingglass Road experiences a high degree of delay for left turns from Lookingglass Road."

The TSP recommends consideration of four alternatives to resolve the operational issues at Highway 42 and Lookingglass:

1. Install a raised median creating a right-in/right-out intersection. *Median should be landscaped. Impacts to Highway 42/Main St. intersection, Brosi Orchard, and Expressway should be examined.*
2. Install a traffic signal at the existing intersection when warranted. *Additional study will be required. Impacts to the Highway 42/Main St. intersection, Brosi Orchard, and Expressway will also need to be examined.*
3. Develop Lost Lane from Safari Rd to OR 42/Brosi Orchard intersection and install a traffic signal when warranted. *Additional study will be required. Impacts to Lookingglass (Highway and Safari intersections), Brosi Orchard, Highway 42/Main St. intersection.*
4. Separated grade crossing.

None of these improvements have been implemented at Highway 42/Lookingglass Road intersection.

The TSP identifies future traffic capacity deficiencies and concludes that

> "…there do not appear to be significant deficiencies related to the capacity of the roads in Winston. The expected traffic volumes on Winston's collector streets are not expected to exceed their capacity. Likewise, the traffic volumes on arterial streets, Highway 42, Old Highway 99 and Lookingglass Road, are not expected to exceed the capacity of five-lane arterial streets. There are, however, some specific locations where capacity issues may be anticipated."

Four locations were identified as potentially needing capacity improvements. Two of the locations, identified in Table 6 of the TSP include:

- Highway 42 Pepsi Road (Stop-controlled): Proposed closing Winston Section Rd will increase traffic with limited sight distance east by So Umpqua River bridge making turns onto highway hazardous.
- Highway 42 Lookingglass (Stop-controlled): Turning vehicles must slow or stop in 45 mph travel lanes

Recommended Street System Improvements

Table 7 of the TSP includes the following street system improvements within the OR 42 EMP study area:

- Improve Winston Section/Pepsi Road to collector standards from Highway 42 to Thompson Ave., including closure of Winston Section Road and Highway 42 intersection.
- Install acceleration/deceleration lanes on Highway 42 at the Pepsi Road and Lookingglass Road intersections.
- Install a traffic signal at the Lookingglass Road/Highway 42 intersection as warrants provide.
- STIP project 15006 introduces the light at Rolling Hills Road and off system improvements via a frontage road from Rolling Hills Road at its intersection to Harmony Drive to Melody Lane.

Deceleration lanes currently exist on OR 42 at Lookingglass Road and Pepsi Road but acceleration lanes have not been constructed. No traffic signal has been constructed at Lookingglass Road.

In addition to these projects specifically related to OR 42, several connectivity projects listed in Table 7 of the TSP could affect volumes on the highway. These include:

- Extend Tokay to Winston Section Road.
- Extend Jorgen Street from Ronald Avenue to Winston Section Road.
- Upgrade remaining section of Brosi Orchard Road to local street standards.
- Extend Ronald Avenue to Brosi Orchard Road.

These improvements do not appear to have been completed yet.

Goals, Objectives & Policies

Section 6 of the TSP identifies the Goals, Objectives, and Policies for the Winston TSP. These cover all modes of transportation as well as other related area. Key goals and objectives as they relate to OR 42 and ODOT are listed below:

1. General Transportation Objectives

Objective C. The City will coordinate transportation planning and construction efforts with Douglas County and ODOT.

2. Land Use Objectives

Objective A. The City will consider changes to the Winston Zoning Ordinance that will more effectively implement Comprehensive Plan goals that encourage mixed-use and high density development near the city center to reduce private vehicle trips by increasing access to transportation alternatives.

Objective D. The City will adopt a new Subdivision and Land Partition Ordinance that includes simplified Planned Unit Development requirements, and that includes design standards and review criteria for adequate transportation facilities. Such provisions shall include, but are not limited to, connections between neighborhoods for vehicles, bicycles and pedestrians, access management standards, and street width and parking requirements.

Objective E. The City should revise the Winston Zoning Ordinance wherever appropriate, especially the articles regarding Off-Street Parking, Site Development Plan review and Conditional Use Permit review, to add or improve transportation-related design standards and review criteria. Such revisions shall include, but are not limited to, connections between neighborhoods for vehicles, bicycles and pedestrians, access management standards, and street width and parking requirements.

Objective G. The City will coordinate land use planning activities with the Oregon Department of Transportation and Douglas County. To this end, the City will provide notice of pending decisions and invite ODOT and/or Douglas County to make suggestions for design improvement and conditions of approval, and to participate in pre-application conferences whenever practical.

3. Street Goal, Objectives & Policies

Goal: Provide a comprehensive system of streets and highways that serves the mobility and multi-modal travel needs of the Winston Urban Area.

Objective 1: Develop a comprehensive, hierarchical system of streets and highways that provides for optimal mobility for all travel modes throughout the Winston Urban Area.

Objective 2: Design City streets in a manner that: maximizes the utility of public right-of-way, is appropriate to their functional role, and provides for multiple travel modes, while minimizing their impact on the character and livability of surrounding neighborhoods and business districts.

Policy D. The City of Winston will develop “Standard Details” for design of all streets within the Winston Urban Area, in cooperation with Douglas County and ODOT.

Policy E. The City of Winston should apply the street design standard that most safely and efficiently provides motor vehicle capacity appropriate for the functional classification of the street.

Objective 3: The City will continue to promote traffic safety by enforcing clear vision area regulations applicable to public and private property located at intersections. The existing clear vision area ordinance shall be reviewed and revised as needed to ensure that fences, hedges, foliage and other landscaping features do not obstruct the line of sight or drivers and cyclists entering intersections.

Objective 4: Efficiently plan, design, and construct City-funded street improvement projects to meet the safety and travel demands of the community.

Policy A. The City will select street improvement projects from those listed in the Winston Transportation System Plan when making significant increases in system capacity or bringing arterial or collector streets up to urban standards. The selection of improvement projects should be prioritized based on consideration of improvements to safety, relief of existing congestion, response to near-term growth, system-wide benefits, geographic equity, and availability of funding.

Policy B. To maximize the longevity of its capital investments, the City should design street improvement projects to meet existing travel demand and, whenever possible to accommodate anticipated travel demand for the next 20 years for that facility.

Objective 5: A street system that is improved to accommodate travel demand created by growth and development in the community.

Policy A. The City will require Traffic Impact Analyses as part of land use development proposals to assess the impact that a development will have on the existing and planned transportation system. Thresholds for having to fulfill this requirement and specific analysis criteria shall be established in the Winston Public Facilities Standards.

5. Pedestrian Goal, Objectives & Policies

Goal: To provide a comprehensive system of connecting sidewalks and walkways that will encourage and increase safe pedestrian travel.

Objective 1: The City of Winston will create a comprehensive system of pedestrian facilities.

Policy G. Encourage ODOT and Douglas County to have marked crosswalks at all signalized intersections. Crosswalks at controlled intersections should be provided near schools, commercial areas, and other high volume pedestrian locations on collector and arterial streets within the City and Urban Growth Area.

6. Bicycle Goal, Objectives & Policies

Goal: To facilitate and encourage the increased use of bicycle transportation in Winston by assuring that convenient, accessible and safe cycling facilities are provided.

Objective 1: The City of Winston will create a comprehensive system of bicycle facilities.

Policy B. The City of Winston should progressively develop a linked bicycle network, focusing on the arterial and collector street system, and concentrating on the provision of bicycle lanes, to be completed within the planning period (20 years). The bikeway network will serve bicyclists' needs for travel to workplaces, commercial district, transit stops, schools and recreational destinations.

Policy C. The City of Winston will use all opportunities to add bike lanes in conjunction with road reconstruction and striping projects on collector and arterial streets.

Policy D. The City of Winston should encourage ODOT and Douglas County to use all opportunities to add bike lanes in conjunction with road reconstruction and striping projects on collector and arterial roads.

Policy H. The City of Winston will actively work with ODOT to improve bicycling on State Highway 42 within the City and Urban Growth Area.

9. Transportation System Management Goal, Objectives &Policies

Goal: To maximize the efficiency of the existing surface transportation system through management techniques and facility improvements.

Objective 1: A system of traffic control devices maintained and operated at an optimal volume/capacity ratio that is consistent with existing funding levels.

Policy B. The City will encourage Douglas County and ODOT to regularly maintain all of the traffic control devices on county and state maintained roads within the City of Winston and Urban Growth Area.

Objective 2: To maximize the effective capacity of the street system through improvements in physical design and management of on-street parking.

Policy C. The City should facilitate implementation of bus bays by the local public transit provider on congested collector and arterial roads maintained by Douglas County and ODOT. The feasibility, location and design of bus bays for county and state maintained roads shall be developed in consultation between the City, County, ODOT and the local public transit provider.

10. Access Management Goal, Objectives & Policies

Goal: To increase street system safety and capacity through the adoption and implementation of access management standards.

Project Relevance

Upon completion of the EMP, the city may need to adopt the EMP before ODOT can present the EMP to the Oregon Transportation Commission (OTC) for adoption. After adoption of the EMP, subsequent amendments to the city's TSP will need to be compatible with the EMP.

1.2.4. Douglas County Comprehensive Plan (2010)

The Douglas County Comprehensive Plan officially establishes the findings, goals, objectives, policies, and policy implementation statements addressing 17 elements including Agriculture, Energy, Transportation and Land Use.

Objectives and Policies applicable to planning for the EMP are excerpted below.

Agricultural Resource Management

Objective B: To minimize conflicts between agricultural and nonagricultural uses.

Policy 2. Extension of urban facilities and services into agricultural areas shall be avoided wherever possible. No water or sewer facility shall be sized or designed to provide domestic series to agricultural areas. When regional facilities pass through designated agricultural areas to serve a documented need elsewhere, all reasonable alternative of routing shall be explored and the route having lest impacts on agricultural lands shall be encouraged.

Water Resources

Objective G: To utilize the water resources of Douglas County in an efficient manner.

Policy 2. Consider in land development and road construction, actions which minimize the degradation of water quality.

Air Quality

Objective C: To initiate specific measures to minimize or eliminate air pollution from the following sources: open burning, dust, smoke stacks, automotive exhaust, industrial and commercial operation

Policy 2. Encourage pathways for non-motorized travel to be provided within urban areas.

Energy

Objective A: Reduce the need for energy through sound planning and economic principles.

Transportation 16. Encourage the placement of bike and pedestrian equipment (e.g., bike racks and covers) along routes of heavy traffic and at termini (e.g. shopping centers government buildings and schools).

Population

Objective A: Develop a land use plan that provides for orderly growth which reduces the cost of essential services while preserving the basic elements of our environment.

Policy 6. Coordinate planning efforts of local governments and special districts to maximize efficiency of public facilities, and have land sue actions reflect goals of the plan.

Public Utilities, Facilities and Services

Objective E. To provide for facilities, utilizes and services that ensure a strong foundation for the County economy.

Policy 2. Encourage the improvement of east-west highway access between interior Douglas County and the coast. This includes Highways 38, 138, and 42.

Transportation *(Additional Transportation Objectives and Policies are replicated in the TSP and therefore are cited below in that section)*

Objective: To be consistent with the state transportation system plan.

Policy 2. The County Transportation System relies upon the Oregon Transportation System Plan and its modal and multi modal plans for analysis and policy direction on state facilities and relies upon the Oregon Department of Transportation to apply plan policies and programs on state facilities. The Comprehensive Plan also has policies for the Green urban unincorporated area (UUA) including the following under land use:

Policy 3. (Commercial) Future commercial development should be located along Carnes Road, at Kelley's Corner, and along Grange Road.

Policy 4. (Commercial/Industrial) A mix of light industrial and heavy commercial uses is encouraged in the designated portions of the area bounded by Carnes Road, OR 42, and I-5. In addition, there are specific industrial policies that pertain to industrial development east of I-5 at Interchange 119. These policies address improvements to Grant Smith Road, screening and landscaping, and drainage plans.

Applicable polices for transportation are the same as what is in the Douglas County TSP excerpted under that section.

Project Relevance

Upon completion of the EMP, the county may need to adopt the EMP as a policy and implementation document before ODOT can present the EMP to the OTC for adoption. Therefore, the EMP and Comprehensive Plan must be consistent or amended to be made consistent.

1.2.5. Douglas County Transportation System Plan (1998) and Amendments (2001)

The TSP was compiled from the acknowledged Douglas County Comprehensive Plan Transportation Element and support documents. The Transportation Element contains findings concerning: the background and existing conditions that affect Douglas County's transportation system; a description of Douglas County's transportation facilities ; a County roadway network plan; a Bikeway Master Plan; transportation goals and policies; and bikeway policies. The support documents contain discussions of road, rail, air, waterways, pipeline, pedestrian and bicycle modes, and the transportation for the disadvantaged.

Proposed urban and rural preferred alternatives that are considered conceptual in nature with no funding identified that are incorporated in the TSP include:

- Reconfigure the I-5 lnterchange at Hwy 42 and the I-5 lnterchange at Hwy 99.
- Widen Hwy 42 between Winston and Green.

Transportation Policies

Objective A: To accommodate existing and projected transportation demands in Douglas County.

Policy 3. Existing and planned transportation facilities and corridors shall be protected from conflicting land uses.

Policy 4. All transportation facilities should be periodically evaluated for their adequacy to accommodate existing demand.

Objective B: To develop and utilize design standards for road construction which promote vehicular safety and economy of construction.

Policy 1. The following classification system will be used for the planning and maintenance of all roads within the County maintenance system: (Revised 6/28/89),

(revised 8/13/97): a Principal Highway, b. Arterial, c. Major Collector, d. Minor Collector, e. Local

Policy 3. Pursuant to the Oregon Highway Plan, direct access points to state managed interstate highway and interchanges shall be prohibited. Direct access to remaining principal highways and arterial roadways should be discouraged to avoid conflicts with through traffic. (Revised 8/13/97)

Policy 4. Direct access to non-interstate Principal Highways should be provided within unincorporated communities at levels which are consistent with land use classifications and facility operations.

Policy 5. Access to state roads is the jurisdiction of the Oregon Department of Transportation

Policy 11. Bicycle/and or pedestrian ways shall be provided to accommodate access from commercial or high density residential developments to adjacent residential areas, transit stops, and neighborhood activity centers within one-half mile of development in the Urban Unincorporated Area of Green or in UGB's where Urban Growth Management Agreements requires improvements.

Objective F: To encourage, coordinate and assist in the development of transportation modes other than private vehicle.

Policy 1. The installation of spur lines in industrial areas as means of facilitating the use of rail transportation shall be encouraged.

Policy 2. The development of rail service connecting the Roseburg area to the Port of Coos Bay and Port of Umpqua at Reedsport shall be encouraged.

Bicycle Transportation

Objective E: To develop a set of standards for bikeway development and establish a prioritization of bikeway construction.

Policy 4. The State of Oregon Department of Transportation is encouraged to install appropriate bikeway improvements on highways and roads under their jurisdiction (and within their maintenance system) as improvement projects are conducted on designated County bikeways.

Rural Unincorporated Communities

Objective: To provide for safe, convenient and economical transportation in rural unincorporated communities.

Policy 1. Encourage organized access on to rural County roads and State Highways.

Circulation Planning

Goal: To provide for safe, convenient and efficient vehicular circulation through the urban unincorporated areas of the County.

Objective E: To establish overall circulation patterns for the Glide, Green, and Tri City areas and promote the proper flow of traffic through all urban unincorporated areas.

Policy 3. Direct property access onto principal highways and arterial streets shall be restricted.

Objective F: To establish the necessary mechanisms to ensure proper implementation of the circulation plans for the urban unincorporated areas of the County.

Policy 1. The evaluation of all proposed plan amendments within urban unincorporated areas should include an assessment of the effect of the amendments on circulation in and through the areas.

Policy 7. The cost of installation of street improvements to a standard higher than that for minor collector streets shall be borne by the County.

Green Policies - Transportation

Policy 1. Encourage the development of sidewalks and pedestrian and bicycle paths throughout the Green Urban Area.

Policy 2. Encourage landscaping along arterial to enhance the visual appearance of the Green Urban area.

Policy Implementation: Priority should be given to construction of sidewalks and walkways to those areas most frequently used by pedestrians. These areas include Green and Sunnyslope schools and Carnes Road.

Green Circulation Plan

Objective: To recognize and address the specific circulation problems which exist in the Green area.

Policy 1. Happy Valley Road (west from Carnes Road), Roberts Creek Road, and Carnes Road (between Linnell Avenue and Happy Valley Road) shall be developed to the lesser standard for major collector streets utilizing a 74 foot right-of-way. The 84 foot major collector standard shall be applied to Carnes Road (between Highway 42 and Linnell Avenue) and to the Happy Valley Road extension (east from Carnes Road). (Revised 12-5- 90)

Policy 2. Those portions of Green Avenue, Circle Drive, Hebard Avenue and Stella Street, which are designated as minor collector streets and which are improved to include pavement, curbs and gutters shall be recognized as meeting an adequate standard and no additional improvement to these streets and street segments shall be required. Parking restrictors or other limitations may be imposed along these streets or street segments in the future, should traffic volumes warrant such action.

Policy 3. Primary access to the potential commercial or industrial sites east of 1-5 should be either directly from the freeway or by way of Grant Smith Road. (Revised 8-1 7-89 QJ)

Policy 4. Speedway Road should only be considered for limited and secondary access to the potential commercial or industrial sites east of 1-5. (Revised 8-1 7-89 QJ)

Amendments to the TSP were adopted October 10, 2001. The amendment identifies the OR 42 Corridor Plan as a multi-modal plan. The amendment also makes it a requirement to install sidewalks in the Green UUA when roads are updated and adds bike routes.

Project Relevance

Upon completion of the EMP, the county may need to adopt the EMP before ODOT can present the EMP to the Oregon Transportation Commission (OTC) for adoption. After adoption of the EMP, subsequent amendments to the county's TSP will need to be compatible with the EMP.

1.2.6. Green Urban Unincorporated Area Transportation System Plan (2001)

The Green UUA TSP describes the existing conditions in the Green UUA including the road and pedestrian network, accident history, demographics and a buildable lands inventory. The plan proposes improvements.

The Green TSP designates OR 42 as a principal highway. These are the design standards:

- Minimum right-of-way Width - 102'
- Travel Lane Width – 12'
- Shoulder Width - 10'
- Left Turn Lane Width - 14'
- Recommended Number of Travel Lanes 4
- Sidewalk Width - 6'
- Median Width - 14'

The TSP identifies a Type I bikeway located adjacent to OR 42 from Carnes Road to Lookingglass Road. Type I bikeways are located on a separated trail and are designed for the joint use by pedestrians and bicyclists.

The TSP recommends the following projects should be evaluated by the year 2020:

- **Jackie Road at State Highway42**: When road improvements are completed to create the frontage road along Highway 42, local traffic will have this alternative to access Rolling Hills Road. The Rolling Hills intersection is better suited for turning movements onto Hwy. 42.
- **Carnes Road at State Hwy. 42**: Based on the future function of this route, consider reclassifying Carnes Road from Green Siding to Hwy. 42 as an arterial. Continue to coordinate with ODOT on their future improvements to the intersection of Hwy. 42 at Carnes Road.
- **Pedestrian priority route** including a portion along Hwy 42 between Rolling Hills and Carnes.

Project Relevance

Upon completion of the EMP, the county may need to adopt the EMP before ODOT can present the EMP to the Oregon Transportation Commission (OTC) for adoption. After adoption of the EMP, subsequent amendments to the county's TSP will need to be compatible with the EMP.

1.2.7. Douglas County Land Use and Development Ordinance (2010)

The Douglas County Land Use and Development Ordinance (LUDO) govern the development and use of lands and to implements the Douglas County Comprehensive Plan. The County maintains the LUDO online[3]. The most recent amendments were completed in December 2010.

Zoning in the study area is illustrated in Figure 1-2. Lands near the I-5/OR 42 interchange are predominantly industrial. The land west of the industrial area is designated residential with commercial surrounding all four quadrants of Kelly's Corner (Carnes /Roberts Creek Road intersection with OR 42) and extending along the southeast side of OR 42. The purposes of the zoning designations along the corridor are defined as follows:

- **(M-1) Light Industrial**: The Light Industrial classification is intended to create, preserve, and enhance areas containing secondary manufacturing and related establishments and intense commercial uses with limited external impact. These uses are typically appropriate to locations near major thoroughfares and non-manufacturing areas.
- **(M-2) Medium Industrial**: The Medium Industrial classification is intended to create, preserve and enhance areas containing a wide range of manufacturing and related establishments, and is typically appropriate to areas providing a wide variety of sites with good rail or highway access.
- **(M-3) Heavy Industrial**: The Heavy Industrial classification is intended to provide, protect and recognize areas well suited for medium and heavy industrial development and uses free from conflict with commercial, residential and other incompatible land uses. This district is intended to be applied generally only to those areas which have available excellent highway, rail or other transportation.
- **(C-3) General Commercial**: The General Commercial classification is intended to provide areas within which a variety of retail and wholesale business will occur. These areas would serve general community needs with types of activities which need not be conducted wholly within an enclosed building.
- **(C-2) Community Commercial**: The Community Commercial classification is intended to provide areas for localized shopping facilities. It is intended to preserve and enhance areas with a wide range of retail sales and service establishments serving both long and short term needs in compact locations.
- **(RS) Suburban Residential**: The Suburban Residential classification is intended to provide for a primarily single-family suburban environment within which certain limited agricultural pursuits may be carried on. It is intended to be applied in those areas which are within adopted Urban Growth Boundaries, yet have limited urban services.
- **(R-1) Single-Family Residential**: The Single-Family Residential classification is intended to provide for a medium density urban residential use plus related compatible uses such as schools and parks. The classification is designed for those areas adjacent or close to

[3] http://www.co.douglas.or.us/planning/tbl_cont.asp

existing cities or areas with an urban character in which urban services such as public water and sewer is available.

- **(R-2) Multiple Family Residential**: The Multiple-Family Residential classification is intended to provide a wide range of housing density and type while preserving the residential character of an area. This zone applies to properties with minimal topographic limitations; locations which are readily accessible by and to major streets; and adjacent to public open space or commercial services. This zone is intended for areas with a full range of public services including public sewer and water.

Additional standards applicable to the project, which will be further identified during the existing conditions documentation phase, may include:

- **Article 30: (FP) Floodplain Overlay**: The flood hazard areas of Douglas County are subject to periodic inundation, resulting in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, impairment of the tax base, and adverse effects on the public health, safety and general welfare.
- **Article 32 Supplementary Provisions for Natural Resource Areas**: This article is designed to provide protection for a number of natural resource areas throughout Douglas County. The article consists of several overlay districts that provide additional development standards or special processes for development in protected areas. The overlay districts are designed to minimize uses which conflict with the resource values being protected and manage the resource areas so as to preserve their original character.
- **Section 3.35.400 Cultural, Historic and Archaeological Resources Overlay (CHA)**: The purpose of this overlay district is to reasonably assure that resources classified as "significant" in Douglas County's Historic Resource Register are conserved and protected, while providing an expedient process for reviewing land use actions that may affect identified sites.
- **Section 3.35.500 Geologic Hazards Overlay (GH)**: The purpose of the Geologic Hazards overlay district is to protect the public health, safety and welfare by assuring that development in hazardous or potentially hazardous areas is appropriately planned to mitigate the threat to man's life and property.

Standards to consider during the development and alternative design process include:

- **Section 3.35.070 Bicycle and Pedestrian Circulation:**

  Bicycle Circulation #2. The installation of public bikeways as part of new subdivisions, multi-family developments, planned developments and for new commercial structures greater than 3,000 sq. ft. within commercial districts shall occur, as described below, within the UUA of Green and UGB's where this ordinance is applicable. If Urban Growth Management Agreement (UGMA) standards exist which address public bikeways, those standards shall apply.

Bicycle Circulation #2.a. As a condition of development approval, public bikeway improvements necessary to develop designated bikeways, in the Comprehensive Plan, shall be installed along the front of the subject parcel. Bikeway improvements shall meet those standards described in the Douglas County Comprehensive Plan and shall be installed under the guidance of the Public Works Department.

Pedestrian Circulation #3. The installation of public sidewalks as part of new subdivisions, multi-family developments, planned developments and within commercial districts shall occur, as described below, within the UUA of Green and UGB's as implemented through the UGMA. If UGMA supplemental standards exist, which address public sidewalks, those standards shall apply. Public sidewalks shall not be required for existing developments.

The figure on page 48 of the Green Transportation System Plan identifies Highway 42 from Carnes Road to Rolling Hills as a key pedestrian route within the Green UUA.

- **Section 3.35.060 Coordination of Development Review**: To maintain a process for coordinated review of future land use decisions affecting transportation facilities, corridors and sites and to provide information to ODOT, City of Roseburg, City of Myrtle Creek, Ports of Umpqua and Coos Bay and affected school districts in Douglas County of applications made under Sections 2.060 (3) & (4), land divisions, developments generating more than 300 trips per day and development within Airport Impact Zones, Douglas County will:

  1. Provide written information to the affected jurisdiction describing the proposed action prior to making a final land use decision; and

  2. Provide an opportunity to the affected jurisdiction to qualify as a party to the proceeding.

- **Section 3.35.065 Access onto State Roads**: ODOT has responsibility and authority in managing access to State Highways. This section outlines the County coordination process with ODOT when an ODOT access permit, for direct access to a state highway, is required.
- **Section 3.35.940 Right-of-Way Protection Overlay (RW)**: The Right-of-Way Protection Overlay (RW) classification is intended to protect future streets identified in the Circulation Plans and Land Use Element of the Comprehensive Plan from significant conflicting uses. Requiring development to be in accordance with the requirements of the overlay zone and preventing preemptory uses along identified routes ensures that sufficient and appropriate streets can be provided for future community development.

  The RW Overlay shall be applied to designated principal highways, arterials, major and minor collectors, and necessary local streets shown on the Circulation Plans for Green, Glide, and Tri City which require future right-of-way.

Project Relevance

Upon completion of the EMP, the county may need to adopt the EMP before ODOT can present the EMP to the OTC for adoption. Amendments to the Ordinance may be necessary to

implement the EMP consistent. After adoption of the EMP, subsequent amendments to the county's ordinance will need to be compatible with the EMP.

1.2.8. Douglas County Coordinated Public Transit Human Services Transportation Plan (2009)

The Douglas County Coordinated Public Transit Human Services Transportation Plan is intended to show how human services providers work together to address the transportation need of low income people, older adults, and people with disabilities. The plan identifies local public and private transportation providers and the human services providers. The Plan serves as a planning document to support existing services and provide direction for future opportunities.

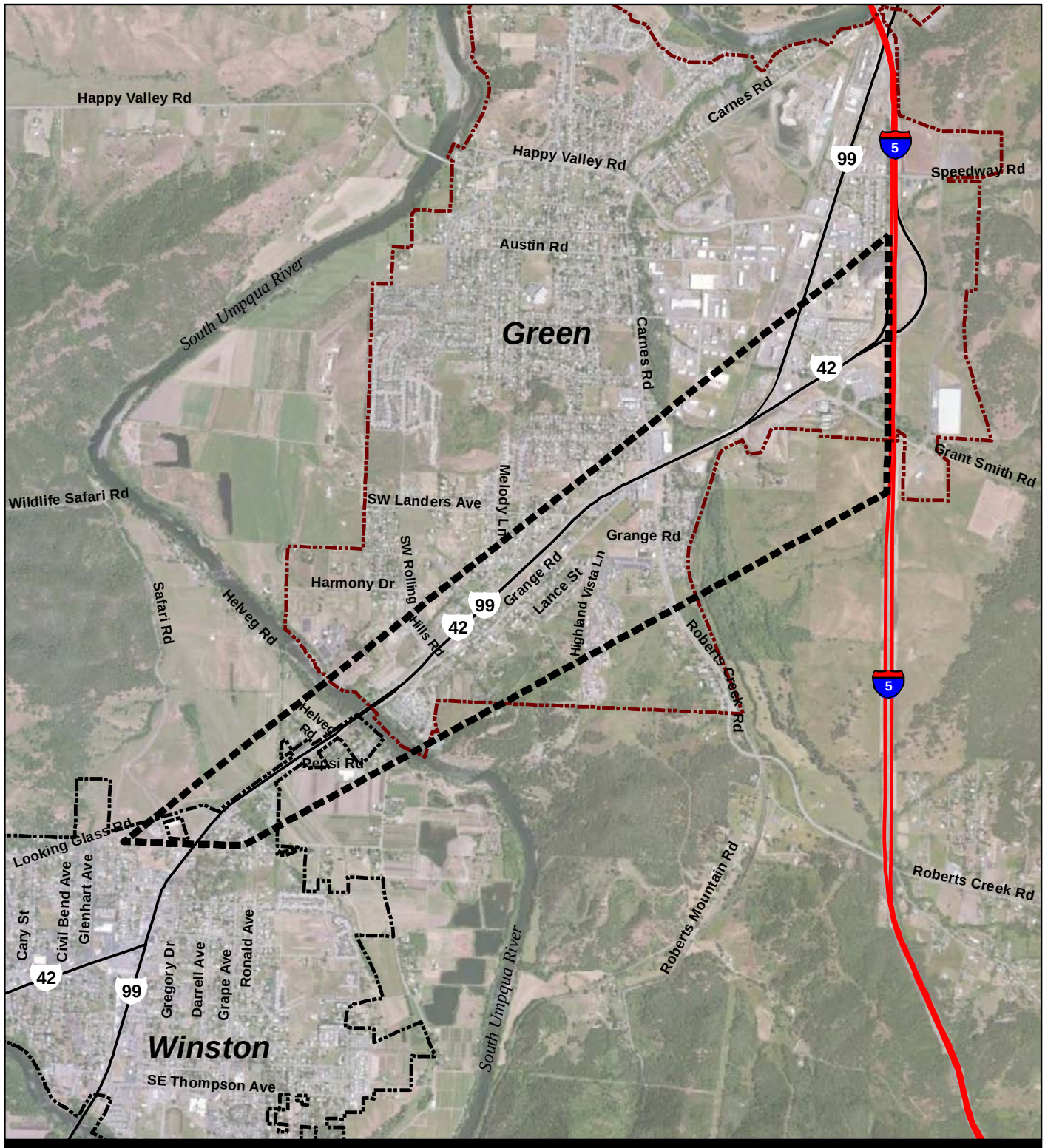
Umpqua Transit services the study area with fixed route, dial-a-ride and commuter bus service. Dial-a-ride service is provided all by volunteers and is offered four days per week. However, even with these services, a lack of public transportation options for people living outside of Roseburg was identified in the plan due to gaps in service area. Some of the recommendations the plan makes are the following:

- Explore development of commute route through Winston to Roseburg.
- Expand hours of operation and route structure.
- Utilize a coordinated land use-transportation process when making transportation planning decisions.
- Improve coordination among all agency providers in order to make better use of existing resources to close service gaps.

Project Relevance

The EMP will consider how these recommended improvements can be implemented.

Attachments:
Figure 1-1. Study Area
Figure 1-2. Zoning Designations



OR 42 Expressway Management Plan

Legend

- Study Area
- City of Green UUA Boundary
- Winston City Limits
- Interstate
- Oregon Routes

Figure 1-1
Study Area

Data Sources:
ESRI, 2011
Oregon Department of Transportation (ODOT), 2009
Oregon Geospatial Enterprise Office (GEO), 2009

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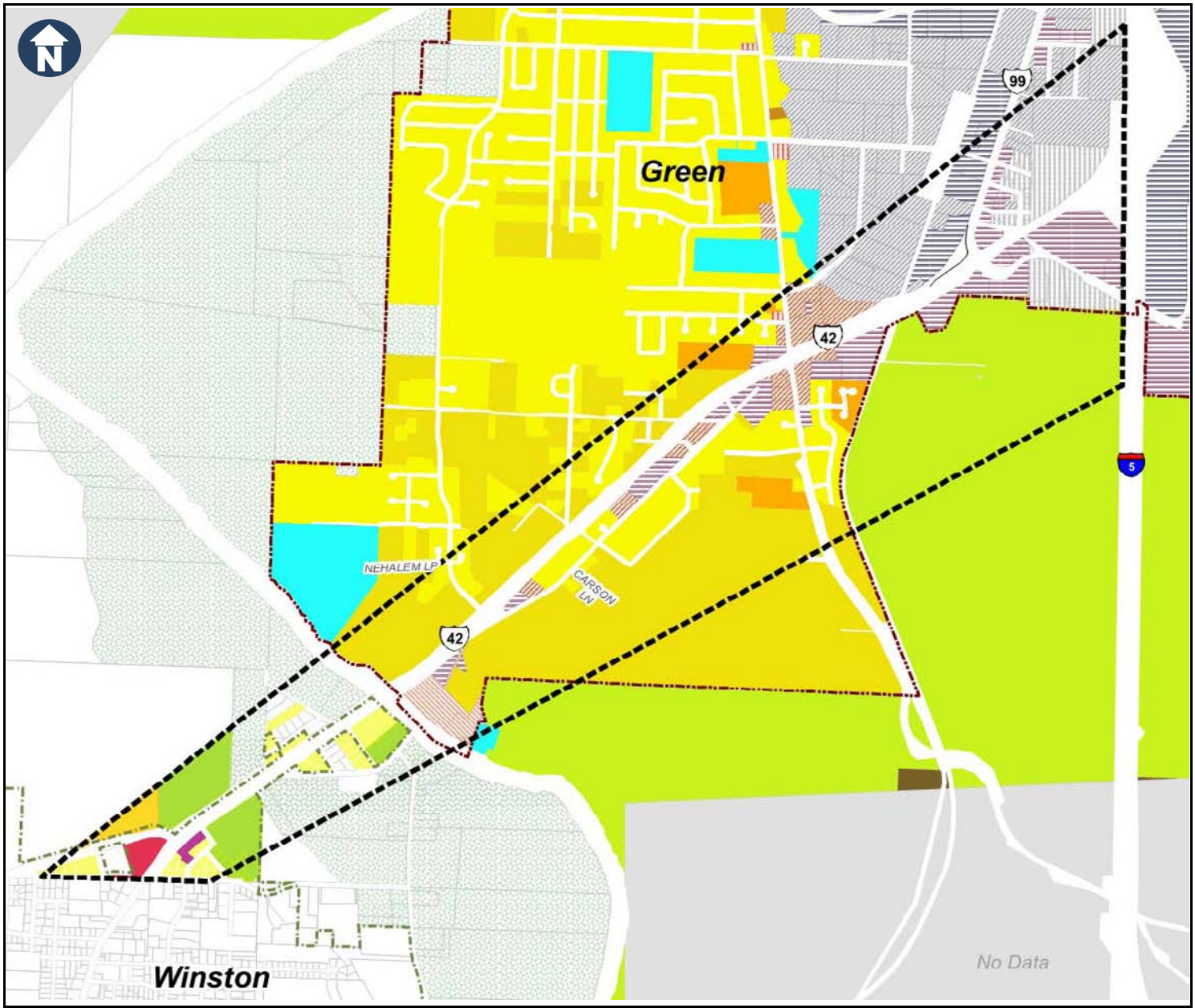

Legend

- Study Area
- Green UUA Boundary
- Winston City Limits

City of Winston Zoning

- Ag - Open Space (A-O)
- Office Professional/Commercial (C-OP)
- General Commercial (GC)
- Residential Low Density (RLA)
- Residential High Density (RH)

Douglas County Zoning

- Exclusive Farm Use - Grazing (FG)
- Exclusive Farm Use - Cropland (F1)
- Rural Residential - 5 (5R)
- Rural Residential - 2 (RR)
- Suburban Residential (RS)
- Rural Residential - 1 (R1)
- Rural Residential - 2 (R2)
- Rural Residential - 3 (R3)
- Tourist Commercial (CT)
- Limited Commercial (C1)
- Community Commercial (C2)
- General Comercial (C3)
- Light Industrial (M1)
- Medium Industrial (M2)
- Heavy Industrial (M3)
- Public Reserve (PR)

OR 42 Expressway Management Plan

Data Sources:
Douglas County, Oregon 2011
Oregon Department of Transportation (ODOT), 2009
Oregon Geospatial Enterprise Office (GEO). 2009

Figure 1-2
Zoning Designations

OR 42 Expressway Management Plan:
Lookingglass Road to I-5 Exit 119

Technical Memorandum #2
Study Area Definition, Goals and Objectives

Prepared for

Oregon Department of Transportation, Region 3
3500 NW Stewart Parkway
Roseburg, Oregon 97470

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon

August 2013

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2.2. Expressway Management Plan Goal and Objectives 3

2. STUDY AREA DEFINITION, GOALS AND OBJECTIVES

The purpose of the OR 42 Expressway Management Plan (EMP) is to allow officials to determine how best to improve and preserve the Expressway's mobility, safety, and operations along the corridor. The EMP is also a planning document used to select projects for upgrading the Expressway to meet applicable standards. This technical memorandum (#2) defines the study area and establishes goals and objectives that focus on maximizing the safety and efficiency of the Expressway and identify consistency with existing and planned land uses.

2.1. Study Area

Oregon Route 42 (OR 42), also known as "Coos Bay-Roseburg Highway", begins at US 101 in Coos County and travels eastward to connect with Interstate 5 (I-5) at the Exit 119, in Douglas County. It is a statewide highway and freight route and is also part of the National Highway System (NHS). The OR 42 Expressway Management Plan (EMP) focuses on the 3.32-mile segment designated as an Expressway which begins at Lookingglass Road in the City of Winston and travels through the Green Urban Unincorporated Area (UUA) in Douglas County to the ramps at I-5 Exit 119 (see Figure 2-1).

Although this portion of OR 42 was designated as an Expressway, it has never been fully upgraded to meet Expressway design and performance standards. The Oregon Highway Plan (OHP)[1] describes Expressways as complete routes or segments of existing highways and planned highways that offer safe and efficient high speed and high volume traffic movements. Their primary function is to provide for intercity travel and connections to ports and major recreation areas with minimal interruptions. In urban areas, speeds are moderate to high. Usually there are no pedestrian facilities, and bikeways may be separated from the roadway. Private access is discouraged and public road connections are highly controlled.

Like many highways in Oregon, OR 42 must serve both regional traffic and local traffic generated by the adjacent communities. It must also serve the varied needs of the commuters, recreational users, and freight as well as accommodating different modes of travel (i.e., vehicles, bicycles, pedestrians, transit). These diverse users and demands must be balanced both the length of the corridor and within the study area.

2.1.1. Regional Perspective

OR 42 plays an important role in the communities of Coos and Douglas Counties. This highway works together with I-5, US 101, and a number of other state and local roads to form a regional transportation system that serves both personal and freight travel. OR 42 also serves as alternate route to OR 38 through the coast range. Both routes are designated as statewide highways and freight routes, and are part of the National Highway System, because they serve an important economic role in terms of freight movement between the coast and I-5.

[1] 1999 Oregon Highway Plan, Oregon Department of Transportation, Salem, OR, 2006.

The overall management focus for the entire OR 42 corridor[2], including this EMP study area, is to balance:

- **Safety**: ODOT is charged with ensuring the traveling public is provided a safe and efficient transportation system.
- **Freight movements and economic development**: In serving as a primary link between the South Coast and I-5 corridor, the freight function of the OR 42 corridor must be protected and enhanced. Specifically, maintaining travel times and highway capacity will ensure efficient freight movement and therefore support the regional economy.
- **Local transportation needs**: The highways will continue to serve as primary arterials in the communities along the corridor. Providing access to local land uses and adequate pedestrian facilities will continue to be a consideration in the operation of both facilities.

2.1.2. Local Perspective

This EMP study area focuses on the section of OR 42 classified as an Expressway beginning at Lookingglass Road (Mile point 73.88) and ending at I-5 Exit 119 (Mile Point 77.17), as shown in Figure 2-1. The expressway is generally oriented from the southwest to northeast. Topographically, the corridor includes a variety of mild grades, all less than four percent. Geometrically, the corridor is relatively straight, with only gradual curvature in several locations. The expressway has four travels lanes, two in each direction, with a two-way left-turn lane and right-turn lanes at some intersections.

The southwestern portion of the study corridor, from Lookingglass Road to the South Umpqua River, lies within the City of Winston. OR 42 provides the Winston area with the major east-west access to the Roseburg Urban Area, Oregon Coast port facilities, regional recreation areas, and provides a connection to I-5 for north-south travel through the county. Most private access is restricted along this stretch of the highway but there are a number of public access points.

From the South Umpqua River to the bridge crossing the Central Oregon and Pacific (CORP) Railroad line, OR 42 is surrounded by a mix of land uses. Commercial and retail developments are primarily focused at Kelly's Corner, the signalized intersection of OR 42 with Carnes Road and Roberts Creek Road. This section of the expressway contains numerous private accesses and local road connections.

The northeastern portion of the study corridor extends from the bridge crossing the CORP rail line to the ramps at I-5 Exit 119. The south side of the Exit 119 ramp terminal is largely comprised of undeveloped land, with the exception of a truck stop. The north side of the exit is comprised of a dense mix of commercial, industrial, and residential developments. Access is

[2] Corridor Plans for the OR 38 and OR 42 Corridors, Volume 1. Oregon Department of Transportation, Region 3, Roseburg, OR, June 2001.

restricted to public roads including the signalized intersection with Old Highway 99S, which extends northward through the Green UUA and into Roseburg.

2.2. Expressway Management Plan Goal and Objectives

The EMP will culminate in a long-term plan for managing the Expressway to maintain and improve mobility, safety, and operations in the corridor. The following goals and objectives provide the guiding principles for the planning and management of the OR 42 corridor.

Goals

The goals of this EMP are to develop a plan for expressway improvements that can be implemented over time to:

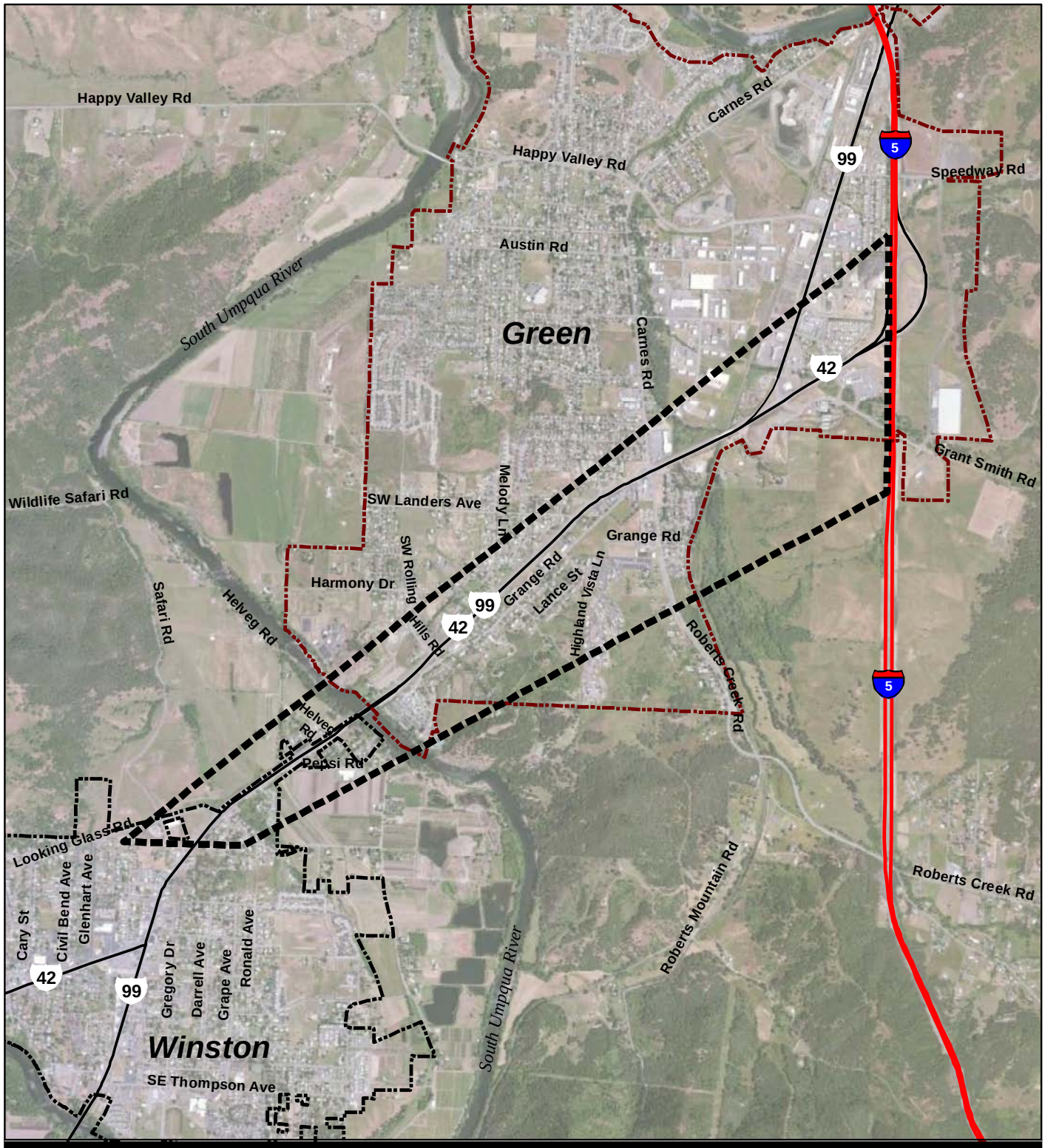
- Improve safety and operations of the expressway corridor for all modes of travel.
- Upgrade the corridor to meet Expressway design and performance standards.
- Facilitate freight travel by maintaining efficient traffic movement through the corridor.
- Develop integrated transportation facilities and services that support economic development.
- Provide better accessibility to the Cities of Roseburg and Winston and the Green UUA consistent with the adopted local comprehensive land use and transportation plans.

Objectives

The objectives of the EMP are to:

- Identify existing operational deficiencies based on the mobility standards prescribed in the Oregon Highway Plan (OHP) and the level-of-service standards in the Douglas County and City of Winston Transportation System Plans (TSP).
- Review crash patterns and the state rating systems (Safety Priority Index System and Safety Improvement Program) to identify safety deficiencies.
- Evaluate the need for capacity improvements based on the adopted, comprehensive land use plans of Douglas County and the Green Urban Unincorporated Area and the City of Winston.
- Develop concepts to upgrade the corridor to Expressway design and performance standards, improve safety, and increase capacity to address existing and future needs.
- Develop an access management plan that provides for safe and acceptable operations on the transportation network, and meets OHP requirements and the access spacing standards in Oregon Administrative Rule (OAR) 734-051.
- Identify potential local system enhancements that maintain connectivity and complement the expressway upgrades.
- Incorporate off-road bicycle and pedestrian elements, such as sidewalks, bike lanes, and pathways, as well as corresponding roadway crossings.
- Coordinate planning efforts for OR 42 with other plans and projects in the study area.

Attachments: Figure 2-1. Study Area



OR 42 Expressway Management Plan

Legend

- Study Area
- City of Green UUA Boundary
- Winston City Limits
- Interstate
- Oregon Routes

Figure 2-1
Study Area

Data Sources:
ESRI, 2011
Oregon Department of Transportation (ODOT), 2009
Oregon Geospatial Enterprise Office (GEO), 2009

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OR 42 Expressway Management Plan:
Lookingglass Road to I-5 Exit 119

Technical Memorandum #3
Existing Conditions

Prepared for

Oregon Department of Transportation, Region 3
3500 NW Stewart Parkway
Roseburg, Oregon 97470

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon 97201

August 2013

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3. EXISTING CONDITIONS

This memorandum summarizes the inventory of existing conditions along OR 42 Expressway Management Plan (EMP) corridor. The existing transportation system and traffic condition includes a roadway inventory, estimated traffic volumes, traffic operations analysis, and an analysis of historic crash patterns. Existing environmental and land use conditions are reviewed in the project study area, with the intent being to help inform the conceptual alternatives development process in a subsequent phase of planning for improvements.

3.1. Existing Transportation System Conditions

The OR 42 expressway serves local and regional vehicular and freight traffic as well as transit, bicycles and pedestrians. This review of existing conditions includes OR 42an analysis of operational and safety deficiencies based on policies, standards, goals and objectives developed in Technical Memorandums #1 and #2.

3.1.1. Transportation System Inventory

The transportation system inventory examines the highway, intersecting roadways, bridges, bicycle and pedestrian facilities, transit facilities, and rail facilities.

Roadway Inventory

Within the study area, OR 42 is a statewide highway and freight route and is also part of the National Highway System (NHS). The OR 42 EMP focuses on the 3.32-mile segment designated as an Expressway which begins just east of Lookingglass Road in the City of Winston and travels through the Green Urban Unincorporated Area (UUA) in Douglas County to the ramps at I-5 Exit 119.

Table 3-1 summarizes the roadway characteristics for OR 42 within the study area. The inventory reviews the state and local (Douglas County) functional classification as well as posted speed, number of lanes, and widths of the travel lanes, total surface, and right of way. The majority of the inventory was constructed from ODOT mapping and online databases.

Table 3-2 summarizes characteristics for some of the key intersecting roadways along OR 42 within the study area. The inventory reviews the functional classification as well as posted speed and number of lanes.

Additional roadway characteristics that were investigated include on-street parking, bike lanes, sidewalks, and crosswalks. No on-street parking was observed. Pedestrian and bicycle facilities are described in a later section.

Table 3-1. OR 42 Roadway Inventory

OR 42 Segment	Functional Classification		Posted Speed (mph)	No. of Lanes[3]	Width (ft)	
	State[1]	Douglas County[2]			Surface[3]	Travel Lane[3]
Brosi Orchard Road to Lookingglass Road (MP 73.76 to 73.88)	Rural Principal Arterial, Expressway, NHS, FR	Principal Highway	45	5	70	48
Lookingglass Road to Helweg Road (MP 73.88 to 74.36)	Rural Principal Arterial, FR	Principal Highway	55	5	84-96	48
Helweg Road to End of Structure (MP 74.36 to 74.52)	Urban Principal Arterial, FR	Principal Highway	55	4	48-52	48-52
End of Structure to Carnes Road (MP 74.52 to 75.72)	Urban Principal Arterial, FR	Principal Highway	55	5	80-85	48
Carnes Road to Roberts Creek (MP 75.72 to 75.81)	Urban Principal Arterial, FR	Principal Highway	55	5	96	48
Roberts Creek to Winery Ln (MP 75.81 to 76.07)	Urban Principal Arterial, FR	Principal Highway	50	6	88-96	60
Winery Ln to Grant Smith Road (MP 76.07 to 76.22)	Urban Principal Arterial, FR	Principal Highway	50	5	78-92	48
Grant Smith Road to I-5 (MP 76.22 to 76.64)	Urban Principal Arterial, FR	Principal Highway	50	4	42-68	24-48

NHS – National Highway System, FR – Freight Route

Notes:
1. Functional Classification and National Highway System Status on Oregon State Highways, Prepared by the Road Inventory and Classification Services Unit of ODOT 1/26/2011, http://www.oregon.gov/ODOT/TD/TDATA/rics/docs/ORStateHwysFCandNHS.pdf
2. Douglas County Transportation System Plan, Adopted February 14, 1998
3. Highway Inventory Summary Report, http://highway.odot.state.or.us/cf/highwayreports/aml_summary_report_by_route_no.cfm

Table 3-2. OR 42 Corridor Cross-Street Inventory

Intersecting Roads	Functional Classification[1]	Jurisdiction	Traffic Control at OR 42	Posted Speed (mph)	No. of Lanes
Lookingglass Road	Minor Arterial	City of Winston	STOP Sign	40	2
Umpqua Safari RV Park	Private	Private	STOP Sign	20	2
Pepsi Road	Local	Douglas County	STOP Sign	20	2
Helweg Road	Local	Douglas County	STOP Sign	20	2
Winston Section Road	Major Collector	Douglas County	STOP Sign	20	2
Rolling Hills Road	Major Collector	Douglas County	STOP Sign	20	2
Andorra Drive	Local	Douglas County	STOP Sign	20	2
Landers Avenue	Major Collector	Douglas County	STOP Sign	20	2
Emils Way	Local	Douglas County	STOP Sign	20	2
Grange Road	Major Collector	Douglas County	STOP Sign	20	2
Carnes Road	Major Collector	Douglas County	Traffic Signal	30	2
Art Mill Lane	Private	Private	STOP Sign	30	2
Winery Lane	Private	Private	STOP Sign	30	2
OR 99	Minor Arterial	ODOT	Traffic Signal	30	2
Grant Smith Road	Local	Douglas County	Traffic Signal	30	2

Notes:
1. Determined by ODOT functional classification maps, Winston TSP, and Douglas County Transportation System Plan

Bridge Inventory

The 2012 bridge inventory data for OR 42 was obtained from ODOT's Bridge Maintenance Section and reviewed. One element used to evaluate bridge conditions is the sufficiency rating, which is a complex formula that takes into account four separate factors to obtain a numeric value rating the ability of a bridge to service demand. The result of this method is a percentage in which 100 percent would represent an entirely sufficient bridge and zero percent would represent an entirely insufficient or deficient bridge. Those bridges with a sufficiency rating of 80 or less are eligible for rehabilitation. Those bridges with a sufficiency of 50 or less are eligible for replacement. Bridges lose their eligibility status for a period of ten years after a (Highway Bridge Program) project is completed.

Two additional elements are used to rate bridge conditions: structural deficiency and functional obsolescence. Structural deficiency is determined based on the condition rating for the deck, superstructure, substructure, or culvert and retaining walls. It may also be based on the appraisal rating of the structural condition or waterway adequacy. Functional obsolescence is determined based on the appraisal rating for the bridge deck geometry, underclearances, and approach roadway alignment. It may also be based on the appraisal rating of the structural condition or waterway adequacy.

There are five bridges located on OR 42 within the study area, as listed in Table 3-3. The east bridge over the South Umpqua River is identified as having a low service life and vertical clearance issues; although, recent work in 2009 was conducted to strengthen piers, improve the vertical clearance, and provide a seismic and bridge rail retrofit. The other four bridges have no deficiencies identified. One of these four bridges, the railroad overpass, has a sufficiency rating at or below 80 which suggests it may be eligible for rehabilitation.

Table 3-3. OR 42 Bridge Conditions

Bridge ID	Milepoint	Name	No. of Lanes	Sufficiency Rating	Deficiencies
01986A	74.13	South Umpqua Overflow	4	81	ND
01923	74.47E	South Umpqua River	2	46.6	LSL, VC
01923A	74.47W	South Umpqua River	2	90.1	ND
02173A	75.99	Creek & CORP	5	74.8	ND
20333	76.65	OR 42 over Interstate 5	2	80	ND

Acronyms: ND: Not Deficient, LSL: Low Service Life, VC: Vertical Clearance

Source: ODOT, 2012 Bridge Condition Report

Pedestrian and Bicycle Facilities Inventory

Because the study area of OR 42 is designated as an expressway, limited on-roadway bicycle and pedestrian facilities are expected. Rather, off-road bicycle and pedestrian elements such as pathways, as well as alternate parallel routes are acceptable.

There are only a few sections of OR 42 within the study area with sidewalks or marked bike lanes and only two intersections with marked crosswalks (Carnes Road/OR 42 and Grant Smith Road/OR 42). On the north side OR 42, a multi-use path extends the length of the expressway. On the south side of OR 42, sidewalks and bike lanes are present on OR 42 southwest of Lookingglass Rd but these facilities end where the expressway begins. Some isolated segments of bike lanes and sidewalks are also present at the intersections of Carnes Road, and Roberts Creek Road.

Transit Inventory

Umpqua Transit serves the study area with paratransit, fixed route, and commuter bus service on weekdays. Paratransit, or dial-a-ride, service is provided five days per week between 6:50 AM and 6:30 PM for people with qualifying disabilities who cannot use the fixed route service. South County Route 99 extends from Roseburg to Canyonville and runs along OR 42 between I-5 and Winston with a stop on Carnes Road. Morning service includes two northbound bus runs and three southbound bus runs that stop at Carnes Road. Afternoon service includes three northbound bus runs and two southbound bus runs that stop at Carnes Road. The Winston Commuter Route extends from Roseburg to Winston and also uses OR 42 and the stop on Carnes Road. The commuter service includes nine northbound bus runs and eight southbound bus runs each day.

However, even with these services, a lack of public transportation options for people living outside of Roseburg was identified in the Douglas County Coordinated Public Transit Human Services Transportation Plan[1] due to gaps in service area. Some of the recommendations the plan makes are the following:

- Expand hours of operation and route structure.
- Utilize a coordinated land use-transportation process when making transportation planning decisions.
- Improve coordination among all agency providers in order to make better use of existing resources to close service gaps.

Greyhound Bus Lines has a terminal in downtown Roseburg, approximately seven miles from Winston. Currently, six buses per day operate between Portland and California, with four leaving southbound and two northbound out of the terminal in Roseburg.

Rail Inventory

One railroad line passes under OR 42 with a grade-separated crossing. The Central Oregon and Pacific (CORP) Railroad is a short line railroad owned by RailAmerica, Inc., which is based in Jacksonville, Florida. Currently, the railroad line is exclusively for freight, with 90 percent of their delivery consisting of forest products.

[1] Douglas County. Douglas County Coordinated Public Transit Human Services Transportation Plan, 2009.

CORP, headquartered in Roseburg, Oregon, has 247 miles of track between Eugene, Oregon and Montague, California[2]. CORP tracks are maintained to Federal Railroad Administration (FRA) Class 1 (47 miles) and Class 2 (200 miles) conditions, which limits maximum speeds to 10 mph for Class 1 or 25 mph for Class 2. Current service includes one northbound and one southbound train five days a week on eight routes:

- Eugene and Roseburg
- Glendale and Medford
- Roseburg and Dillard
- Dillard and Riddle
- Dillard and Glendale
- Springfield and Cottage Grove
- Sutherlin and Roseburg
- White City and Medford

No trains currently operate south of the Rogue Valley.

No passenger rail service is available in the study area; the closest available is AMTRAK located in Eugene, Oregon.

3.1.2. Traffic Volumes

The assessment of traffic conditions includes development of existing traffic volumes, evaluation of traffic operations, and a review of historical crash patterns.

Average Annual Daily Traffic Volumes

The average annual daily traffic (AADT) volumes along OR 42 are currently available through the year 2010. Volumes from years 2006 through 2011 are summarized in Table 3-4.

Annual growth trends on OR 42 varied somewhat over the six-year period examined. Table 3-4 shows volumes remaining constant in between 2006 and 2007, then declining through 2009 and finally beginning to rebound in 2010. Lower present day traffic volumes on OR 42 are consistent with trends throughout the state and likely reflect the economic downturn along with an increase in 2007 gas prices that influenced driver behavior.

[2] 2010 Oregon Rail Study

Table 3-4. Average Annual Daily Traffic

Mile-point	Count Location	Average Annual Daily Traffic (AADT) Volume[1]					
		2006[2]	2007	2008	2009[2]	2010	2011
73.86	0.02 mile south of Umpqua Safari Road	17,800	17,800	16,300	14,700	14,900	14,400
74.41	0.06 mile south of Umpqua River	21,200	21,200	19,400	16,800	17,100	16,500
75.70	0.02 mile southwest of Southwest Carnes Road	24,000	24,000	22,000	19,300	19,600	19,000
76.05	0.02 mile southwest of Winery Lane	24,800	24,800	22,800	20,500	20,800	20,100
76.40	0.25 mile southwest of Pacific Highway (I-5)	25,200	25,200	23,100	22,400	22,700	22,000

Notes:
1. The Transportation Systems Monitoring Unit compiles the traffic count information for the state highway system. One third of the state highway system is counted each year and adjusted to reflect AADTs. The AADTs for the remaining two thirds of the system are estimated to reflect area traffic trends.
2. Actual counts on OR 42 were collected in 2006 and 2009.

Source; 2006-2011 Transportation Volume Tables, ODOT Transportation Data Section, Transportation Systems Monitoring Unit.

Traffic Counts

Traffic volume data collected for this project consist of 4-hour and 16-hour turning movement counts. The 16-hour counts use 15 minute intervals in the 2-6 PM period, and the 4-hour counts use 15-minute intervals for the duration of the count. Table 3-5 provides a list of all intersection count locations, type of count, and count date.

Table 3-5. Vehicle Count Locations and Types

Location	Type of Count	Count Date
1. OR 42 @ Lookingglass Road	16-hour Turning Movement Classification	5/16/2011
2. OR 42 @ Umpqua Safari RV Park	4-hour Turning Movement Classification	5/24/2011
3. OR 42 @ Pepsi Road	4-hour Turning Movement Classification	6/13/2011
4. OR 42 @ Helweg Road / Winston Section Road	4-hour Turning Movement Classification	5/24/2011
5. OR 42 @ Rolling Hills Road / Andorra Drive	16-hour Turning Movement Classification	5/16/2011
6. OR 42 @ Landers Avenue	4-hour Turning Movement Classification	5/24/2011
7. OR 42 @ Emils Way / SW Grange Road	4-hour Turning Movement Classification	6/13/2011
8. OR 42 @ Carnes Road/Roberts Creek Road (Signalized)	16-hour Turning Movement Classification	5/11/2010
9. OR 42 @ Art Mill Lane	4-hour Turning Movement Classification	6/13/2011
10. OR 42 @ Winery Lane	4-hour Turning Movement Classification	6/13/2011
11. OR 42 @ OR 99/Grant Smith Road (Signalized)	16-hour Turning Movement Classification	5/10/2010

The traffic volume data were examined to determine a common peak hour among the intersections which is the one-hour period when the sum of volumes entering at all corridor intersections is highest. The common peak hour for the corridor intersections was found to occur between 3:45 and 4:45 PM for the entire study area. The peak hour at each intersection may not correspond to the common peak hour, but all peaks generally overlap a portion of the common hour.

Design Hourly Volumes

ODOT generally requires that transportation facilities be analyzed under design hourly volumes (DHVs), known as 30th highest hour volumes. The 30th highest hour volumes are used in traffic operations analysis so that results are valid for all but a few hours of the year. The procedure for determining 30th highest hour volumes is specified in ODOT's Analysis Procedures Manual (APM)[3] and briefly described below.

The 30th highest hour traffic volumes are calculated by multiplying the peak hour volumes by a seasonal factor. The seasonal factor is determined from automatic traffic recorders (ATR), which are electronic counting sites on roadways that count vehicles continuously. It is desirable to obtain data from ATRs that (1) are within the corridor area, (2) are on similar roadway types or within similar area types, or (3) have similar seasonal trend characteristics. The seasonal factors for the corridor area use a combination of ATR and seasonal trend data. The seasonal trend data averages the commuter and summer trends to represent the travel characteristics for the area. The data used in calculating the seasonal factors is included in Appendix A.

Peak hour count data was seasonally adjusted, and volumes were balanced to achieve a uniform dataset for analysis. Most of the counts were collected in 2011 (the existing analysis year); therefore an annual growth adjustment was not applied to those intersections. Since the general trend in recent years has been negative or stagnant, a growth factor was not applied to the two intersections with counts from 2010. Instead, volumes these two intersections were adjusted to reach a balance with the remainder of the corridor. Figure 3-1 shows the existing balanced PM peak hour volumes developed for this project.

Freight Traffic

OR 42 is designated as a freight route throughout the study area. However, trucks are a moderate component of traffic along the corridor, with a range of approximately 4 to 7 percent in the eastbound direction, and 4 to 6 percent in the westbound direction during the peak hour. Most truck traffic continues through the entire corridor (very little local traffic), with approximately half of the vehicles turning to or from OR 99/Grant Smith Road, and the other half traveling to or from Interstate 5. Some of the traffic coming to or from OR 99/Grant Smith Road is related to the dense mix of commercial, industrial, and residential developments north of Exit 119.

Similar truck percentages are evident when averaged over the course of a day, although the truck activity generally peaks earlier in the day than overall traffic volumes.

[3] Analysis Procedures Manual, Oregon Department of Transportation, Transportation Development Division Planning Section, Transportation Planning and Analysis Unit, Salem, Oregon, April, 2006, Section 4.3.

Traffic Behavior

Discussions with ODOT's traffic staff and field observations of driver behavior indicate that a significant imbalance develops in the eastbound direction as drivers destined for I-5 begin to make lane choices as they travel through the OR 42 corridor. Ramp volumes from ODOT's Transportation Volume Tables show that approximately 85 percent of the traffic from OR 42 at Exit 119 is traveling northbound on I-5 and only 15 percent is traveling southbound.

The two travel lanes on OR 42 currently split after the OR 99/Grant Smith intersection with the left through lane destined for I-5 northbound and the right through lane destined for I-5 southbound. Observations indicate that after drivers cross the river, they begin to shift towards the left of the two through travel lanes in preparation for the freeway ramps. The lane imbalance builds throughout the length of the corridor until the lane utilization resembles the distribution of ramp volumes with 80 to 85 percent of the traffic in the left lane and 15 to 20 percent of the traffic in the right lane as drivers approach OR 99/Grant Smith Road.

This lane imbalance is present throughout the day but is particularly acute during peak commuting hours, when traffic volumes on the roadway are greatest.

3.1.3. Traffic Operations

The year 2011 traffic operations were assessed using the design hourly traffic volumes.

Operational Criteria

Transportation engineers have established various methods for measuring traffic operations of roadways and intersections. Most jurisdictions use either volume-to-capacity (v/c) ratio or level of service (LOS) to establish performance criteria. Both the LOS and v/c ratio concepts require consideration of factors that include traffic demand, capacity of the intersection or roadway, delay, frequency of interruptions in traffic flow, relative freedom for traffic maneuvers, driving comfort, convenience, and operating cost.

Volume-to-Capacity (V/C) Ratio

For each analyzed intersection, a comparison of traffic volume demand to intersection capacity was conducted to evaluate how well an intersection is operating. This comparison is presented as a v/c ratio. A v/c ratio of less than 1.00 indicates that the volume is less than capacity. When it is closer to zero, traffic conditions are generally good, with little congestion and low delays for most intersection movements. As the v/c ratio approaches 1.00, traffic becomes more congested and unstable, with longer delays.

Level of Service (LOS)

For each analyzed intersection, a comparison of traffic volume to intersection Level of Service (LOS) was conducted to evaluate how well an intersection is operating. LOS is a function of control delay, which includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Six standards have been established, ranging from LOS A, where

there is little or no delay, to LOS F, where there is delay of more than 50 seconds at unsignalized intersections, or more than 80 seconds at signalized intersections.

It should be noted that, although delays can sometimes be long for some movements at a STOP-controlled intersection, the v/c ratio may indicate that there is adequate capacity to process the demand for that movement. Similarly at signalized intersections, some movements, particularly side street approaches or left turns onto side streets, may experience longer delays because they receive only a small portion of the green time during a signal cycle, but their v/c ratio may be relatively low. For these reasons, it is important to examine both v/c ratio and LOS when evaluating overall intersection operations. Both are reported in the following section.

95th Percentile Queues

For each analyzed intersection, a comparison of traffic volume to intersection queues was conducted to examine where demand may exceed available storage. Queues that spill out of storage bays and into adjacent travel lanes impair intersection performance by reducing capacity and creating potential safety concerns. Queues may also extend from one intersection through another upstream intersection which also impairs performance. The 95th percentile queue length (meaning 95 percent of all queues will be shorter) is used for this analysis.

Operational Standards

The Oregon Highway Plan (OHP)[4] has established several policies that enforce general objectives and approaches for maintaining highway mobility. Of these policies, the Highway Mobility Standards (Policy 1F) establish maximum v/c ratio targets (or standards) for peak hour operating conditions for all highways in Oregon based on the location and classification of the highway segment being examined. The OHP policy also specifies that the v/c ratio targets be maintained for ODOT facilities through a 20-year horizon.

The v/c ratio target that shall be applied along the OR 42 study area is 0.80 for the entire expressway corridor. This standard applies to the intersections within the City of Winston Urban Growth Boundary (UGB). It shall be applied to the intersection within the Green Urban Unincorporated Area (UUA) boundary as well because this unincorporated community lies directly between two existing cities, forming a nearly continuous urban area.

Douglas County has also established performance standards, identified in the Douglas County TSP, although the County defers to state standards along OR 42, as it is an ODOT owned facility. The City of Winston and Green UUA also defer to ODOT for operational standards along OR 42.

[4] Table 6: Maximum Volume to Capacity Ratio Targets for Peak Hour Operating Conditions, 1999 Oregon Highway Plan, OHP Policy 1F Revisions, Adopted December 21, 2011, Oregon Department of Transportation, website: http://www.oregon.gov/ODOT/TD/TP/docs/ohp11/policyadopted.pdf.

Traffic Operations Analysis Procedures

All operations were evaluated using the methodology outlined in the *2000 Highway Capacity Manual* (HCM) along with the procedures outlined in ODOT's Analysis Procedures Manual (APM). The Synchro/SimTraffic analysis software was selected to perform the intersection analysis since it can provide the v/c ratio and LOS output of an HCM analysis and consider the systematic interaction of the intersections with regard to queuing and delays.

Synchro is a macroscopic model similar to the Highway Capacity Software (HCS), and like the HCS, is based on the 2000 HCM. The Synchro model explicitly evaluates traffic operations under coordinated and uncoordinated systems of signalized and unsignalized intersections. The v/c ratios and LOS presented in this report are based on the Synchro model output.

SimTraffic animates traffic flow based on input volumes and signal timing and allows viewing of traffic flow under saturated traffic conditions where traffic may spill over from one intersection to another. It is particularly effective at evaluating closely spaced intersections. The SimTraffic model was run multiple times using different arrival patterns to determine how sensitive traffic operations are with subtle variations in traffic flows. The 95th percentile queues from the SimTraffic model are also considered in this report.

As noted above, the results from both Synchro and SimTraffic were considered in this document. Because these programs evaluate operations using different methodologies, the analysis results sometimes vary; however, the differences are generally minor unless saturated or congested conditions are present. Under saturated conditions, SimTraffic queuing and delays present results that reflect how congested intersections impact each other, while Synchro represents intersection performance in isolation and may provide better results.

Existing Traffic Operations

Traffic operations were evaluated at the 11 study area intersections. Operations are described in the following sections and the detailed analysis worksheets are presented in Appendix B.

Table 3-6 summarizes the results of the traffic operations analysis and Figure 3-2 presents the v/c ratios and LOS performance by lane group for the corridor intersections. These findings reflect the current signal timing plans implemented by ODOT at signalized corridor intersections. The current lane imbalance in the eastbound direction is reflected in the analysis by modifying the factors that represent lane utilization for the eastbound travel lanes.

Table 3-6. Existing (2011) Design Hour Intersection Operations

Intersection	Critical[1] or Controlling Movement		2011 PM Peak Hour			Operational Standards[3]
	Approach	Movement	V/C Ratio[2]	LOS[2]	Delay[2] (sec.)	
1. OR 42 @ Lookingglass Rd	Local	SB L	0.37	C	29	0.80
	Expressway	WB T	0.23	-	-	
2. OR 42 @ Umpqua Safari RV Park	Local	NB L/R	0.03	B	9	0.80
	Expressway	EB T	0.34	-	-	
3. OR 42 @ Pepsi Rd	Local	WB L	0.09	B	5	0.80
	Expressway	WB T	0.29	-	-	
4. OR 42 @ Helweg Rd/Winston Section Rd	Local	SB L/R	0.02	C	14	0.80
	Expressway	WB T	0.39	-	-	
5. OR 42 @ Rolling Hills Rd/Andorra Dr	Local	NB L/T/R	0.17	C	13	0.80
	Expressway	WB T	0.37	-	-	
6. OR 42 @ Landers Ave	Local	SB L	0.20	C	36	0.80
	Expressway	WB T	0.40	-	-	
7. OR 42 @ Emils Way/SW Grange Rd	Local	NB L/T/R	0.56	E	20	0.80
	Expressway	WB T	0.40	-	-	
8. OR 42 @ Carnes Rd/Roberts Creek Rd (Signalized)	Overall		0.77	C	30	0.80
9. OR 42 @ Art Mill Ln	Local	NB L/R	0.02	A	20	0.80
	Expressway	EB T	0.45	-	-	
10. OR 42 @ Winery Ln	Local	WB L	0.01	B	23	0.80
	Expressway	EB T	0.44	-	-	
11. OR 42 @ OR 99/Grant Smith Rd (Signalized)	Overall		0.78	C	24	0.80

Acronyms: For intersection approaches NB = northbound, SB = southbound, EB = eastbound, and WB = westbound. At the intersection approach L = left-turn movement, T = through movement, and R right-turn movement. Some approaches have shared lanes where two or more travel movements may be permitted as indicated with a slash.

Notes:
1. The critical movement at a signalized intersection is the overall operation of the intersection. The controlling movement at an unsignalized intersection is the stopped (or yield) movement with the worst v/c ratio.
2. The v/c ratio and LOS are provided from Synchro HCM Intersection Analysis Reports, while delay values are from SimTraffic.
3. Mobility standards are drawn from Table 6 of the 1999 OHP. Study area intersections are non-MPO, outside of an STA, and have a non-freeway speed limit greater than 45 mph. Intersections 1-4 are within the UGB, while study area intersections 5-11 are outside the UGB.

SHADED – results indicate where operational standards are not met

Vehicular traffic operations meet mobility standards under existing conditions throughout the corridor. The signalized intersection of OR 42 at Carnes Road approaches mobility standards with a v/c ratio of 0.77 and LOS C. The signalized intersection of OR 42 at Grant Smith Road approaches mobility standards with an overall v/c of 0.78 and LOS C.

Five intersections experience queuing that either exceeds available storage or extends past the nearest public intersection. Table 3-7 summarizes the intersection movements these queues exist.

Table 3-7. Existing (2011) 95th Percentile Queues Exceeding Available Storage

Intersection	Approach & Movement	95th Percentile Queue (ft.)	Available Storage (ft.)	Percent Time Blocked[1]
1. OR 42 @ Lookingglass Road	SB R	75	25[3]	
3. OR 42 @ Pepsi Road	NB R	75	25[3]	7
5. OR 42 @ Rolling Hills Road / Andorra Drive	NB L/T/R	100	100[2]	
8. OR 42 @ Carnes Road/Roberts Creek Road (Signalized)	EB L	500	375[3]	14
11. OR 42 @ OR 99/Grant Smith Road (Signalized)	EB L	375	300[3]	
	EB T	725	675[2]	16
	EB L	175	150[3]	2

Acronyms: For intersection approaches NB = northbound, SB = southbound, EB = eastbound, and WB = westbound. At the intersection approach L = left-turn movement, T = through movement, and R right-turn movement. Some approaches have shared lanes where two or more travel movements may be permitted as indicated with a slash.

Notes:
1. Percent time block reflects the percentage of time when the queue either extends out of a storage bay and interferes with the adjacent through travel lane or extends past the next upstream intersection.
2. Storage distance reflects spacing to the next public access point.
3. Storage distance reflects length of travel lane or turn bay.

The intersections of Lookingglass Road and Pepsi Road at OR 42 have shoulders that vehicles making right-turns may use for storage, but there are no striped turn lanes. Rolling Hills Road at OR 42 is just reaching the available storage before extending into the next upstream intersection. More significant queuing occurs at the signalized intersections of Carnes Road and OR 99/Grant Smith Road at OR 42. Both intersections experience queues in the eastbound direction that impact the left-turn and innermost through lanes. Much of this queuing may be attributed to the lane utilization as vehicles get closer to the northbound I-5 ramp terminal.

As vehicles travel eastbound towards Interstate 5, a significant amount of traffic uses the left (inner) travel lane. This is because the left lane turns into the Interstate 5 northbound on-ramp, which approximately 90 percent of through-vehicles are destined for. This lane imbalance is noticed as far west as Carnes Road, which affects queue lengths and operations at both signalized study intersections[5].

3.1.4. Crash Analysis

A crash analysis was conducted to determine whether any significant, documented safety issues exist within the corridor and to identify measures at specific locations or general strategies for improving overall safety. As part of the crash analysis, historical crash data were reviewed, intersection and segment crash rates were calculated, and the state's Safety Priority Index System (SPIS) was examined. The crash history data was supplied by the ODOT Crash Analysis and Reporting Unit for the years 2005 through 2010.

[5] Adjustments were made during analysis to account for imbalanced lane utilization in the eastbound direction.

Crash History

The crash analysis included a review of crash history data supplied by the ODOT Crash Analysis and Reporting Unit for the period between January 1, 2005, and December 31, 2010, which were the six most recent full years for which crash data were available at the time of the analysis. The data is summarized in Table 3-8 and illustrated in Figure 3-3 and the reports are contained in Appendix C.

The ODOT database includes records for 166 crashes in the corridor. Of these crashes, approximately five percent resulted in a fatality or incapacitating injury (Type A), 54 percent resulted in minor injuries (Type B), and the remaining 42 percent resulted in property damage only (PDO). (See Figure 3-3.)

There is no obvious trend in crashes increasing or decreasing over the 6-year study period. Rear-end collisions (44 percent) and turning-related collisions (37 percent) were the most common types, followed by sideswipe (5 percent), fixed-object (5 percent), head on (3 percent), angle (2 percent) and pedestrian (1 percent) collisions. The majority of reported crashes occurred during the day (nearly 90 percent), in dry conditions (approximately 70 percent).

Speed was not identified as a notable influence on the reported crashes within the study area, although alcohol was attributed to approximately 10 percent of the collisions.

The three-quarter-mile segment of the expressway from Rolling Hills Road/Andorra Drive to Emils Way/Grange Road (including intersections) had 42 reported crashes, which were primarily comprised of turning-related collisions (almost 70 percent). There were four fatal or serious injury crashes which is almost 10 percent of the total crashes. Another 25 (60 percent) resulted in a minor injury.

Although the study area segment of OR 42 is designated as an expressway, it is not currently operating as such. The high number of turning-related collisions from side streets reported for this corridor is not consistent with typical expressway conditions.

Segment Crash Rate

Crash rates were calculated for the study area intersections and entire corridor segment. For the study corridor, the crash rate is calculated as the number of crashes per million vehicle miles traveled (crashes/mvm). The overall segment crash rate was calculated at 1.21. This rate is compared with the 2010 average statewide crash rates for expressways in the urban highway system of 0.78[6]. The higher crash rates observed within this study area, compared to statewide average, is largely due to the limited access that most other expressways maintain, resulting in fewer side street collisions.

[6] 2010 Oregon State Highway Crash Rate Tables, p. 5, ODOT, August 2011.

Intersection Crash Rates

At intersections, the crash rate is calculated as the number of crashes per million vehicles entering the intersection. The critical rate methodology in the Highway Safety Manual[7] was used to identify locations that warrant further review.

Unsignalized Intersections

Although the signalized intersections had the highest crash rates, the OR 42 at Rolling Hills/Andorra Drive intersection was flagged for further review. This intersection had 15 crashes over the 6-year analysis period including two crashes that resulted in severe injuries, and eight other crashes that resulted in minor injuries. Twelve of the crashes were related to vehicles turning to or from Rolling Hills Road/Andorra Drive.

The intersection of OR 42 at Emils Way/Grange Road is the intersection of second greatest concern based on the critical rate methodology. This intersection had 13 crashes over the 6-year analysis period including eight minor injury crashes and one fatality. Nine of the crashes were related to vehicles turning to or from Emils Way/Grange Road. There was one crash involved a collision with a pedestrian.

Signalized intersections

Although the two signalized intersections have the greatest number of crashes and the highest crash rates, neither was flagged for further review. Rear-end collisions commonly occur at signalized intersections because so many vehicles are required to stop with signalized traffic control. Turning collisions also occur at signalized intersections, even when protected left-turn phases are included.

OR 99/Grant Smith Road is the study intersection with the greatest number of reported crashes (44) and highest crash rate (0.62 crashes/mev). Most of the crashes at this location were rear end (31) and turning-related (8) collisions. However, one of the reported crashes resulted in a pedestrian fatality, approximately 600 feet west of the intersection. This fatal crash resulted from an impact of an eastbound vehicle with a pedestrian crossing OR 42 from the north side to the south side of the expressway, and was attributed to low pedestrian visibility at night.

The intersection with the second highest number of reported collisions (39) and crash rate (0.53 crashes/mev) is Carnes Road/Roberts Creek Road, which is also a signalized location. Most of the crashes at this location were rear-end (23) and turning-related (14) collisions. One fatal crash was reported at this intersection involving a vehicle turning from Carnes Road that hit by a vehicle on OR 42 that disregarded the traffic light.

[7] Highway Safety Manual, 1st Edition, 2010, Section 4.4.2.5 Critical Rate, American Association of State Highway and Transportation Officials, 2010.

Table 3-8. Summary of Collision Types (January 1, 2005 through December 31, 2010)

Study Location, Along OR 42 Expressway	Collision Type										Total	Severity			Crash Rate
	Rear End	Fixed Object	Angle	Other	Turning	Sideswipe-Overtaking	Sideswipe-Meeting	Head On	Bicycle	Pedestrian		Fatal & Serious Injury Crashes	Minor Injury Crashes	Property Damage Only	
Lookingglass Rd	0	2	0	0	6	0	0	0	0	0	**8**	0	3	5	0.18
Between Lookingglass Rd and Umpqua Safari RV Park	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	
Umpqua Safari RV Park	1	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0.02
Between Umpqua Safari RV Park and Pepsi Rd	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	
Pepsi Rd	1	0	0	0	2	0	0	0	0	0	**3**	0	1	2	0.07
Between Pepsi Rd and Helweg Rd	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	
Helweg Rd/Winston Section Rd	1	1	0	0	0	0	1	0	0	0	**3**	0	3	0	0.07
Between Helweg Rd and Rolling Hills Rd	0	0	0	0	1	0	0	0	0	0	**1**	0	0	1	
Rolling Hills Rd/Andorra Dr	**1**	**0**	**1**	**0**	**12**	**1**	**0**	**0**	**0**	**0**	**15**	**2**	**8**	**5**	**0.31**
Between Rolling Hills Rd and Landers Ave	1	0	1	0	2	2	0	1	0	0	**7**	0	5	2	
Landers Ave	1	1	0	0	5	0	0	0	0	0	**7**	1	4	2	0.14
Between Landers Ave and Emils Way	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	
Emils Way/Grange Rd	**3**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**1**	**13**	**1**	**8**	**4**	**0.23**
Between Emils Way and Carnes Rd	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	
Carnes Rd/Roberts Creek Rd	23	0	0	0	14	2	0	0	0	0	**39**	1	19	19	0.53
Between Carnes Rd/Roberts Creek Rd and Art Mill Ln	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	
Art Mill Ln	1	0	0	0	0	1	0	0	0	0	**2**	0	1	1	0.04
Between Art Mill Ln and Winery Ln	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	
Winery Ln	5	0	0	0	2	0	1	1	0	0	**9**	0	6	3	0.16
Between Winery Ln and OR 99/Grant Smith Rd	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	
OR 99/Grant Smith Rd	31	0	1	0	8	2	0	1	0	1	**44**	1	24	19	0.62
Between OR 99 and I-5 SB On Ramp	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	
I-5 SB On Ramp	2	0	0	0	1	0	2	0	0	0	**5**	1	3	1	
Between I-5 SB On Ramp and I-5 NB Ramps	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	
I-5 NB Ramps	2	4	0	1	0	0	0	2	0	0	**9**	1	3	5	
Totals	**73**	**8**	**3**	**1**	**62**	**8**	**4**	**5**	**0**	**2**	**166**	**8**	**89**	**69**	**1.21**
% Crashes by Type	44%	5%	2%	1%	37%	5%	2%	3%	0%	1%		5%	54%	42%	

Note: Crashes listed in this table include all reported collisions within 265' of the listed facility along side streets.

Source: ODOT Crash Analysis and Reporting Unit, January 1, 2005 through December 31, 2010.

Safety Priority Index System (SPIS)

The SPIS is a method used in Oregon to identify safety problem areas along state highways. Highways are evaluated in approximately one-tenth mile increments (often grouped into larger segments). Each year these segments are ranked by assigning a SPIS score based on the frequency and severity crashes observed, while taking traffic volume into account. When a segment is ranked in the top 10% of the index, a crash analysis is typically warranted and corrective actions are considered. There are two segments identified in the top 5% of the most recent (2012) SPIS rankings within the corridor. These locations are at OR 42/Carnes Road/ Roberts Creek Road intersection and the OR 42/OR 99/Grant Smith Road intersection.

3.1.5. Summary of Highway Deficiencies

Deficiencies identified through the corridor inventory and operational analysis are summarized in Table 9. The table does not include highway deficiencies where an improvement identified in the 2012-2015 STIP will remedy it.

Table 9. Summary of Deficiencies

Deficiency	Location	Related Goals
Roadway Inventory		
Substandard Shoulders	▪ Blackwell Rd (west of the White City UUC) – Does not meet 8-ft standard & meets 4-ft minimum on some sections. ▪	▪ Mobility ▪ Freight Operations ▪ Safety
Pedestrian and Bicycle Facilities Inventory		
Limited Sidewalks	▪ The only sidewalks within the White City UUC are located on Leigh Way and a few sections of Agate Road.	▪ Safety
Limited Bike Lanes	▪ No bike lanes are striped although Leigh Way has 6-foot shoulders adjacent to the curb for most of its length.	▪ Safety

Table 9. Summary of Deficiencies

Deficiency	Location	Related Goals
Existing Traffic Operations & Safety		
Safety	▪ The fatal/serious injury crash rate for OR 140 west of OR 62 is almost twice as high as the statewide average for the years 2005-2009. ▪ Eight fatal/serious injury crashes occurred on Blackwell or Kirtland Rd during the 5-year analysis period: - 5 occurred at intersections (Blackwell/Dean Creek-1, Blackwell/Kirtland-2, Kirtland/Table Rock-2) - 3 occurred on segments (Blackwell-2, Kirtland-1) ▪ Highest crash segments: - Blackwell from Dean Creek to Kirtland (12 crashes – 1 fatal, 1 severe) - Kirtland from High Banks to Table Rock (10 crashes) - Kirtland from Blackwell to High Banks (9 crashes – 1 severe) ▪ 2012 SPIS Ratings in top 5% - OR 140 segment including Kershaw Rd intersection - OR 62 segment including OR 140 intersection	▪ Safety
Future Traffic Operations		
Operations	▪ Six intersections are expected to have v/c ratios that would not meet the applicable targets under future conditions and four of these intersections would have v/c ratios greater than 1.0: - OR 99 @ I-5 SB Ramps (signalized) - OR 140 @ I-5 NB Ramps - OR 140/Blackwell Rd @ Kirtland Rd - OR 140/Avenue G @ Agate Rd - OR 140 @ OR 62 (signalized) - OR 140 @ Kershaw Rd	▪ Mobility ▪ Freight Movement

3.2. Existing Environmental and Land Use Summary

To understand the potential existing environmental and land use issues, and to help inform the conceptual alternatives development process in a subsequent phase of planning for improvements in the study area, this section identifies and reviews the existing environmental and land use conditions in the study area. A summary of research that includes the mapped known environmental resources is provided. The information gathered was taken primarily from published documents and maps, GIS data, and conversations with appropriate professional contacts. Statewide Planning Goal 5 requires local jurisdictions to inventory natural resources such as riparian corridors, wetlands, wildlife habitat, and recreation trails. These resources are shown on Figure 3-4 and described below. It identifies areas where existing conditions may constrain transportation improvement projects. This section considers federal regulations and standards because potential projects identified in the EMP may be partially federally funded or require federal permits, and therefore would need to comply with federal regulations and standards.

Table 3-10 summarizes resources that may present potential design constraints; these resources are also summarized in the figures presented in this memorandum.

Table 3-10. Environmental and Land Use Summary

Feature	Summary of Key Resources and Concept Guidance	Key Potential Conflict Location(s)	Potential Approval/Permit If Resource Impacted
Wildlife Habitat & Wetlands	Riparian corridors, aquatic habitat, wildlife habitat and wetlands along the Umpqua River and Roberts Creek. *Disturbance to undeveloped areas especially should be avoided if possible. Wetland delineations should be conducted once concept footprints are identified. Impacts to wetlands should be avoided; mitigation and permitting will be necessary if impacts cannot be avoided. BMPs incorporated into project design and construction can help minimize impacts.*	Umpqua River and Roberts Creek	U.S. Army Corps of Engineers Oregon Department of State Lands Oregon Department of Fish and Wildlife Local land use approvals
Threatened and Endangered Species	T&E Species are found in the study area - *Concepts should avoid disturbance of areas where the species are found and water quality impacts and physical impediments in T&E species contributing waterways.*	Umpqua River and Roberts Creek	Oregon Department of Fish and Wildlife NMFS, USFWS, ODA (State and Federal Endangered Species Act Consultation)
Floodplains and Floodways	Umpqua Floodway – Floodway is over 2,000 feet wide. *Fill in floodways and floodplains should be avoided. No net rise will have to be demonstrated if improvements involve any sort of fill in floodways. Cut and fill requirements will need to be adhered to in floodplains.*	Umpqua River and Roberts Creek	FEMA regulations administered through local land use approvals
Socioeconomic and Environmental Justice	Businesses and affected communities - *Displacements should be avoided or minimized.*	None	The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act) Title VI Compliance
Land Use and Zoning	EFU, Floodplain Overlays, Riparian Corridor Overlays, - *Impacts to resource zones should be avoided. Impacts to EFU and Open Space zones may require goal exception.*	Eastern and western ends of study area.	Local land use approvals Potential goal exception for use of Agricultural lands.
Historical and Archaeological Resources	Historical and cultural resources - *Further surveys will need to be completed, especially if improvements will include ground-disturbing activities and or right-of-way acquisition of lots with potential historical resources.*	Throughout corridor	Local land use approvals State Historic Preservation Office, and FHWA – 4(f)
Parks and Recreation and Section 4(f) Resources	Parks and Historical/Cultural Resources - *Avoid resources if possible. Any "use" of Section 4(f) lands will need to demonstrate that it is either a "de minimis" impact or that there was no alternative for the impact.*	Throughout corridor	Federal Highway Administration Consultation and Approval Local land use approvals Oregon Parks and Rec/National Park
Section 6(f) Resources	County Bikeway Parks funded by Land and Conservation Funds - *Avoid resources if possible. Use of Section 6(f) land needs to be mitigated in kind.*	Throughout corridor	National Parks Service Consultation and Approval

3.2.1. Wildlife Habitat and Wetlands

The land adjacent to OR 42 in the study area has for the most part been developed for urban or agricultural uses. Therefore, much of the historical vegetation has been lost due to development and wildlife habitat has been degraded. The study area is within the South Umpqua Watershed. Wildlife habitat is largely limited, except for some wetland areas, to the riparian and aquatic habitat of the South Umpqua River in the western end of the study area and Roberts Creek and the North Fork of Roberts Creek in the eastern end. These water resources provide linear wildlife habitat in the study area. The South Umpqua provides existing habitat for Coho Salmon, Fall Chinook Salmon, Spring Chinook Salmon, and Winter Steelhead. Roberts Creek, but not its tributary, is designated as Essential Salmonid Habitat (ESH) by the

Oregon Department of State Lands (DSL). Roberts Creek supports existing habitat for Coho Salmon and Winter Steelhead.

The land adjacent to Roberts Creek south of OR 42 between the railroad tracks and I-5 appears, from aerial imagery, to be undisturbed. Also in this area is a large Paulstrine Forested wetland with a much smaller area of Paulstrine Scrub wetlands on the southern edge of the study area. The only other identified wetland in the study area, an area of Paulstrine Scrub, is found west of the South Umpqua River between OR 42 and NW Brosi Orchard Road. There are likely wetland areas in the study area in addition to those mapped because the topography is a valley floor with the South Umpqua River flowing to the west and Roberts Creek to the east.

EMP Considerations: To preserve wildlife habitat, disturbances to undeveloped areas should be avoided or minimized if possible. If potential projects include bridge construction, impacts to riparian vegetation should be minimized and native vegetation should be restored where possible. Measures should be incorporated into project design and construction and water quality to protect aquatic habitat. Wetlands permits will be required if impacts to wetlands are unavoidable. Wetland impacts could be minimized or avoided through adequate erosion control Best Management Practices (BMPs) and other protective measures integrated into project design and construction.

3.2.2. Threatened and Endangered Species

The Oregon Natural Heritage Information Center (ONHIC) database documents the federally listed and state listed, threatened, or endangered species. The State of Oregon and the federal government maintain separate lists of Threatened and Endangered (T & E) species. These are species whose status is such that they are at some degree of risk of becoming extinct. The ONHIC information, based on reported historic sightings within two miles of the EMP study area is summarized in Table 3-11. There is only one federally listed threatened species, the Coho salmon, and no State listed threatened and endangered species. However, there are both state and federal species listed as 'sensitive' or 'species of concern'.

Under state law (Oregon Revised Statute 496.171-496.192) the Fish and Wildlife Commission, through the Oregon Department of Fish and Wildlife (ODFW), maintains the list of native wildlife species in Oregon that have been determined to be either "threatened" or "endangered" according to criteria set forth by rule (Oregon Administrative Rule [OAR] 635-100-0105). Plant listings are handled through the Oregon Department of Agriculture, while most invertebrate listings are conducted through the Oregon Natural Heritage Program.

Under federal law, the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) share responsibility for implementing the federal Endangered Species Act (ESA) of 1973 (Public Law 93-205, 16 United States Code (USC) § 1531), as amended. In general, USFWS has oversight for land and freshwater species and NOAA for marine and anadromous species. In addition to information about species already listed, the USFWS Oregon Field Office maintains a list of Species of Concern.

Once it is listed as threatened or endangered, a species is afforded the full range of protections available under the ESA, including prohibitions on killing, harming or otherwise "taking" a species. In some instances, the listing of a species can be avoided by the development of Candidate Conservation Agreements that may remove threats facing the candidate species.

A species is listed as one of two categories, endangered or threatened, depending on its status and the degree of threat it faces. An "endangered species" is one that is in danger of extinction throughout all or a significant portion of its range. A "threatened species" is one that is likely to become endangered in the foreseeable future throughout all or a significant portion of its range. "Species of Concern" is an informal term under the federal listing that is not specifically defined in the federal ESA. The term commonly refers to species that are declining or appear to be in need of conservation.

Table 3-11. ONHIC-Identified Listed Threatened or Endangered Species within the OR 42 Corridor Area

Common Name	Scientific Name	Status	
		Federal[1]	State[2]
Vertebrate Animal			
Long-legged myotis	*Myotis volans*	SOC	SV
Pallid bat	*Antrozous pallidus*	SOC	SV
Pacific pond turtle	*Actinemys marmorata*	SOC	SC
Coho salmon (Oregon Coast ESU)	*Oncorhynchus kisutch pop. 3*	LT	SV
Chinook salmon (Oregon Coast ESU, spring run)	*Oncorhynchus tshawytscha pop. 27*	-	SC
Steelhead (Oregon Coast ESU, winter run)	*Oncorhynchus mykiss pop. 31*	SOC	SV
Invertebrate Animal			
Franklin's bumblebee	*Bombus franklini*	SOC	-
Vascular Plant			
Slender meadow-foam	*Limnanthes gracilis ssp. gracilis*	-	C
Red-root yampah	*Perideridia erythrorhiza*	SOC	C
Koehler's rockcress	*Arabis koehleri var. koehleri*	SOC	C

Notes:
SOC (Species of Concern); LT (Listed Threatened)
SV (Sensitive-Vulnerable); SC (Sensitive-Critical); C (Candidate for Listing as Threatened or Endangered)

Source: Oregon Natural Heritage Information Center (ONHIC) database,2011

Under Oregon's Sensitive Species Rule (OAR 635-100-040), a "sensitive" species classification was created that focuses fish and wildlife management and research activities on species that need conservation attention. "Sensitive" refers to naturally reproducing fish and wildlife species, subspecies, or populations that are facing one or more threats to their populations and/or habitats. Implementation of appropriate conservation measures to address the threats may prevent them from declining to the point of qualifying for threatened or endangered status.

Sensitive species are assigned one of two subcategories. "Critical" sensitive species are imperiled with extirpation from a specific geographical area of the state because of small population sizes, habitat loss or degradation, and/or immediate threats. Critical sensitive species may decline to the point of qualifying for threatened or endangered status if conservation actions are not taken. "Vulnerable" sensitive species are facing one or more threats to their populations and/or habitats. Although not currently imperiled with extirpation from a specific geographical area of the state, vulnerable species could, however, become so with continued or increased threats to populations and/or habitats. For plants, there are no sensitive species but candidate species instead - candidate for listing as threatened or endangered.

EMP Considerations: Measures must be incorporated into project design and construction alternatives to protect water quality for listed aquatic species. To preserve wildlife habitat, disturbances to undeveloped areas should be avoided or minimized if possible.

3.2.3. Floodplains and Floodways

Acting through the local planning agencies, the Federal Emergency Management Agency (FEMA) regulates development within Regulated Floodways and Special Flood Hazard Areas (SFHA). A "Regulatory Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. SFHA are defined as the areas that will be inundated by the flood event having a one-percent chance of being equaled or exceeded in any given year. The one-percent annual chance flood is also referred to as the base flood or 100-year flood. Development in the regulated floodway typically requires a project to demonstrate no net rise and could require an amendment to the FEMA regulated floodway boundaries.

FEMA-designated regulated floodways and SFHA in the vicinity of the study area are displayed in Figure 3-4. The study area intersects one wide floodway, more than 2,000 feet wide, and its extended floodplain of the South Umpqua River (FEMA Map Panel: 41019C1719F, February 17, 2010) in the western portion of the study area. There are areas of development within the floodway. The study area also intersects the 100-year floodplains of, from east to west: North Fork Roberts Creek and Roberts Creek (FEMA Map Panel: 41019C1719F, February 17, 2010 and 41019C1740F, February 17, 2010).

EMP Considerations: Proposed projects identified by the EMP likely will extend into the regulated floodway because of the floodway's size and location. In developing projects, ODOT will have to demonstrate no net rise in the base flood elevation. The project must pay close attention to the floodplain and floodway requirements. Placement of new fill in the regulated floodway may be problematic, and would require an amendment to the FEMA regulated floodway boundaries.

3.2.4. Socioeconomic and Environmental Justice

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations of February 11, 1994, requires agencies undertaking federal projects to identify low-income and minority populations; assess whether high and adverse human health or environmental impacts would result from the alternatives; and ensure participation of low-income and minority populations in the transportation decision making process. The Federal Highway Administration (FHWA) defines a disproportionately high and adverse impact on minority and low-income populations as one that:

- Is predominantly borne by a minority population and/or a low-income population; or
- Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

EO 12898 states that agencies must consider whether human health effects, in terms of risks and rates, are significant or above accepted norms.

Additional underserved populations are the “transportation disadvantaged”. The “transportation disadvantaged” are those persons who because of physical or mental disability, income status, or age are unable to transport themselves or to purchase transportation and are, therefore, dependent upon others to obtain access to health care, employment, education, shopping, social activities, or other life-sustaining activities. Projects receiving federal assistance must also evaluate impacts to these populations to comply with the Age Discrimination Act of 1975, Federal-Aid Highways Act, Rehabilitation Act of 1973 and Americans with Disabilities Act of 1990.

Socioeconomic data for the study area was drawn primarily from the U.S. Census Bureau American Community Survey (ACS) 2009. The census tracts reviewed for this memorandum represent the following geographical areas:

- Census tract 1500 represents the eastern portion of the study area from I-5 to the Umpqua River north of OR 42 and to Roberts Creek Road south of OR 42.
- Census tract 1600 represents the western portion of the study area; west of the Umpqua river and north of OR 42 and south of OR 42 west of Roberts Creek Road to the western edge of the study area.

Based on the data from the ACS, the study area is less diverse than the state. Census tract 1500 has similar race and ethnicity composition to Douglas County with most people identifying themselves as white only. Census tract 1600 is more diverse than census tract 1500 with a higher percentage of people identifying themselves with being two or more races (7 percent). Table 3-12 provides a summary of race and ethnicity survey data.

Table 3-12. Race and Ethnicity (2005-2009 American Community Survey 5-Year Estimates)

Geography		Race								
		White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or More Races	Not Hispanic	Hispanic
Oregon		86%	2%	2%	3%	0%	3%	3%	89%	11%
Douglas County		93%	0%	1%	1%	0%	1%	3%	96%	4%
Census Tract	1500	94%	0%	1%	2%	0%	1%	2%	94%	6%
	1600	88%	0%	1%	1%	1%	2%	7%	96%	4%

Source: ACS: B02001. Race - Universe: Total Population & B03002. Hispanic or Latino Origin by Race - Universe: Total Population

Douglas County tends to have an older population than the state as a whole. Census tracts 1500 and 1600 reflect state age breakdown more than the county. (See Table 3-13.)

Table 3-13. Age of Census Tracts (2005-2009 American Community Survey 5-Year Estimates)

Geography		Median Age; Total (Estimate)	Under 17	18 and 39 years	40 to 64 years	65 and older
Oregon		37.7	23%	30%	34%	13%
Douglas County		45.3	21%	23%	36%	20%
Census Tract	1500	35.1	29%	30%	30%	11%
	1600	40.5	25%	24%	33%	17%

Source: ACS B01002_1_EST

Persons are considered to be in poverty status when income earned is less than the income threshold. The percent of population in poverty for the study area is shown in Table 3-14. As shown in the table, the census tracts in the study area have a lower percentage of individuals living in poverty than Douglas County or the state.

Table 3-14. Percent of Individuals Below Poverty Level (2005-2009 American Community Survey 5-Year Estimates)

Geography		Percent Population for Whom Poverty Status is Determined
Oregon		14%
Douglas County		14%
Census Tract	1500	11%
	1600	12%

Source: ACS B17001. Poverty Status in the Past 12 Months by Sex by Age - Universe: Population for Whom Poverty Status Is Determined

Activity centers that are likely destinations for the local community include the commercial node on the corner of OR 42 and SW Carnes Road. Residents in the area may also travel north to Roseburg for additional medical and commercial purposes and west to Winston as those cities are more developed and offer more selection in services. The New Hope Church is

adjacent to OR 42 east of Rolling Hills Road and is a likely weekend community. There are no public schools, police or fire stations in the study area. There is one private school, Umpqua Valley Christian School, off of Roberts Creek Road south of OR 42. From an economic perspective, the area serves the traveling public, those who use OR 42 as a connection between I-5 and the coast for commerce and tourism.

Figure 3-5 shows the tax lots and estimated right-of-way in the study area. The central portion of the study area has the many small residential lots adjacent to OR 42. There is also a mobile home park which abuts OR 42 just west of I-5.

EMP Considerations: Disproportionate impacts to environmental justice populations by potential projects may be avoided, but potentially affected populations, businesses, and impacts to public resources should be determined through more thorough site analysis, interviews, and other public outreach efforts, as appropriate. Displacements and potential business impacts should be should be avoided or minimized. Displacements of gas stations, motels, restaurants, and parking facilities would potentially have an adverse impact to the immediate local economy.

3.2.5. Land Use and Zoning

Most of the study area is located within the Douglas County Green UUA. The western edge of the study area is in the City of Winston. Although Green is not incorporated, it is developed with higher densities than typical rural areas with industrial, commercial, and residential development.

The dominant land uses surrounding the eastern edge of the study area are industrial in nature. A review of aerial photography indicates a mix of mobile home parks, smaller commercial uses and industrial uses between I-5 and OR 99 including a truck stop. To the west, commercial uses are found along OR 42 and at the intersection of Carnes Road and OR 42, where there is a large grocery store, some strip commercial uses, and restaurants. Further from I-5 along OR 42 are residential areas. Rural residential and agricultural uses are on the west side of the South Umpqua River and the beginning of more urban uses at the western edge of the study area closer to Winston.

Comprehensive plan maps were not available digitally. However, Comprehensive plan designations are in most areas consistent with the zoning designations for the study area. Comprehensive plan land use policies for Green UUA applicable to the study area include:

> **Policy 3. (Commercial)** Future commercial development should be located along Carnes Road, at Kelley's Corner, and along Grange Road.
>
> **Policy 4. (Commercial/Industrial)** A mix of light industrial and heavy commercial uses are encouraged in the designated portions of the area bounded by Carnes Road, OR 42, and I-5.

Figure 3-6 shows zoning designations for the study area. In the study area, along OR 99 and between OR 99 and I-5 is zoned mostly industrial (a mix of light industrial, medium industrial, and Heavy Industrial) to the north with areas of commercial, both community commercial and

general commercial along OR 99. To the south of OR 42, in the eastern edge of the study area, is general commercial and light industrial adjacent to OR 42 and Exclusive Farm Use (EFU) beyond the industrial and commercial zoning with a small part of EFU adjacent to the OR 42. Commercial zoning continues along OR 42 to the south with residential zoning, beyond it and on the north side of OR 42. Residential designations are either suburban residential or rural residential (6,500 square foot minimum lot area) interspersed west of Roberts Creek Road. The lots adjacent to OR 42, just east of the Umpqua River, are zoned suburban residential to the north and tourist commercial to the south. This zoning is inconsistent with the comprehensive plan designation, which is limited residential due to the floodplain. West of the Umpqua River, there are areas zoned for exclusive farm use for grazing within Douglas County jurisdiction. Further west, zoning within the City of Winston is residential and agricultural open space changing to commercial and higher density residential closer to Winston's center.

EMP Considerations: During project development, ODOT will need to determine whether any prime, unique, or statewide importance farmland may be converted to nonagricultural (e.g. transportation facilities) uses, and may need to comply with the federal Farmland Protection Policy Act. Conversion of farmland also may require a Goal Exception to the Oregon Statewide Planning Goals, depending on the type and function of a proposed transportation improvement. OAR 660-012-0065 identifies transportation facilities, services and improvements which may be permitted on rural lands consistent with Goals 3, 4, 11, and 14 without a goal exception. OAR 660-012-0070 outlines the exception process for transportation improvements on rural land.

3.2.6. Historic and Archaeological Resources

Under Section 106 of the National Historic Preservation Act of 1966 (Public Law 89-665), 16 USC 470-470m, and under federal regulations governing the protection of historic and cultural resources (36 Code of Federal Regulations [CFR] 800), federal agencies, and the state and local agencies to which the federal agency has delegated responsibility, are directed to avoid undertakings that adversely affect properties that are included in or are eligible for inclusion in the National Register of Historic Places (NRHP). The NRHP identifies and documents (in partnership with state, federal, and tribal preservation programs) districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. This section summarizes NRHP resources near the study area, as well as other historic, prehistoric, and cultural resources.

For the study area, the State Historic Preservation Office (SHPO) database shows historical resources listed on the NRHP as shown in Table 3-15. These resources are located in the eastern portion of the study area along the southern edge, not directly adjacent to OR 42.

Table 3-15. Historic Resources

Historic Name	Location Description	Resource Type	Primary Construction Date	Original Use	Eligibility Evaluation & Year Listed
Smith, Henry Clay, House	275 Winston Section Rd	Building	1909	Single Dwelling	Significant, 1987
Winston, William C & Agnes, House	350 Winston Section Rd	Building	1887	Single Dwelling	Significant, 1997

ODOT's Rogue Valley Office Archaeologist stated that all cultural surveys conducted in the study area have not found any cultural resources. However, the entire study area has not been surveyed and cultural resources are often found in areas with similar topographical characteristics to those in the study area.

EMP Considerations: The EMP study area has not been completely surveyed. Before any ground disturbing actions, ODOT must conduct an archaeological field investigation. Additionally, if right-of-way acquisition is necessary for any proposed projects, ODOT must conduct a cultural resource survey for tax lots to be acquired determining the eligibility of buildings or structures more than 50 years of age on the lots.

3.2.7. Section 4(f) Resources

Section 4(f) refers to a part of federal law that protects public parks, recreation lands, wildlife and waterfowl refuges, and public or private historic sites. Section 4(f) applies only to Departments of Transportation (DOTs) and their agencies. Highway projects that use public parks must fulfill the requirements of Title 23, USC, Section 138, Section 4(f) of the Department of Transportation Act of 1966, as amended.

A “use” that is subject to the provisions of Section 4(f) occurs:

- When land is permanently incorporated into a transportation facility;
- When there is a temporary occupancy of land that is adverse in terms of the statute’s preservationist purpose; or
- When there is constructive use of the land.

DOTs must demonstrate that a proposed project will not “use” the publicly owned parks and recreation land, where “use” can mean both actual conversion of recreation lands into a transportation use, or a “constructive use,” where off-site impacts of the transportation project substantially impair the site’s vital functions. Findings of “no feasible and prudent alternatives” and “all possible planning to minimize harm” must be well-documented and supported. A feasible alternative is an alternative that is possible to engineer, design, and build. To find that an alternative that avoids a Section 4(f) resource is not “prudent,” one must document that there are unique problems or unusual factors involved with the use of such an alternative. This means that the cost, the social, economic, and environmental impacts, and/or community disruption resulting from such alternatives reach extraordinary magnitudes.

Section 4(f) resource lands within the study area consist of Green Oaks Park, the bikeway along OR 42, and the historic structures listed in Table 3-15. In addition, structures and resources eligible or potentially eligible for inclusion on the NRHP within the study area but not yet identified may be potential candidates for Section 4(f) status.

EMP Considerations: In general, transportation improvements should try to avoid park areas and additional cultural resources surveys should be completed to ensure there is no disturbance to any protected resource. A Section 4(f) evaluation will require ODOT to assess all reasonable alternatives that adversely affect protected lands. If every potential alternative that can meet the purpose and need for the project would impact some Section 4(f) property, then the alternative with the least impact must be selected unless it is not feasible and prudent.

3.2.8. Section 6(f) Resources

The Land and Water Conservation Fund (LWCF) Act of 1965 established grants-in-aid funding to assist states in the planning, acquisition, and development of outdoor recreational land and water areas and facilities. Section 6(f) of the LWCF Act prohibits the conversion of property acquired or developed with the assistance of the LWCF to anything other than public outdoor recreation use without the approval of the Secretary of the U.S. Department of the Interior.

Section 6(f) of the LWCF Act concerns transportation projects that propose impacts to, or the permanent conversion of, outdoor recreation property that was acquired or developed with LWCF Act grant assistance. Section 6(f) requires that replacement lands of equal value, location, and usefulness are provided as conditions to approval of land conversions.

County bikeways in Douglas County received a LWCF grant. In the study area, a bikeway abuts and parallels OR 42 starting from the intersection of OR 99 and OR 42 and heading westward.

EMP Considerations: ODOT will need to contact the National Park Service Project to determine boundaries of any 6(f) endowed land in the study area. Any use of Section 6(f) of the LCWF Act requires replacement of lands to be of equal value, location and usefulness, and contiguous.

3.2.9. Potential Design Constraints

While this review did not identify any “red flags”, the baseline data identifies several land use and environmental conditions that could potentially be affected by transportation improvements. Special attention should be given to avoiding or minimizing:

- Habitat and riparian corridor impacts
- Wetlands impacts
- Impacts to T&E species
- Regulated floodways—particularly the Umpqua River
- Exclusive Farm Use or other resource lands—particularly on the east and west ends
- Potential Section 6(f) protected properties

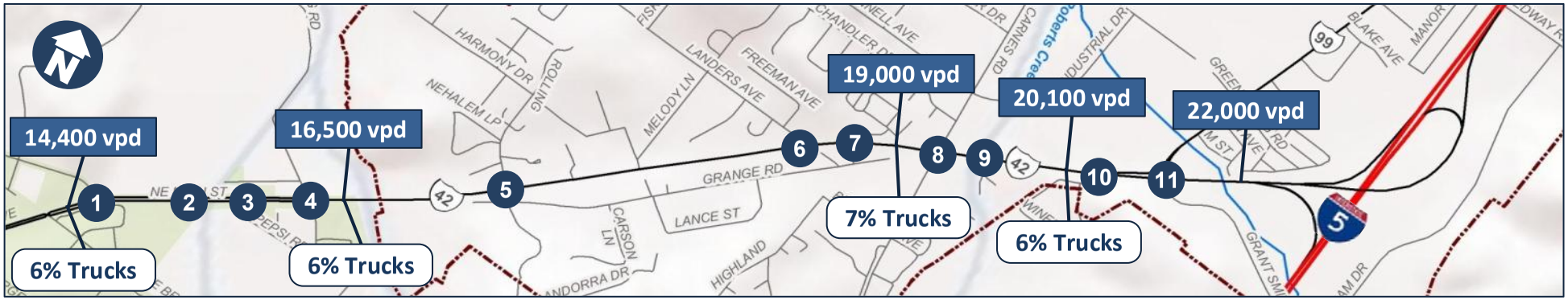
Other design constraints which were not reviewed in this memorandum may include hazardous material sites, fish passage at stream crossings, and stormwater treatment requirements.

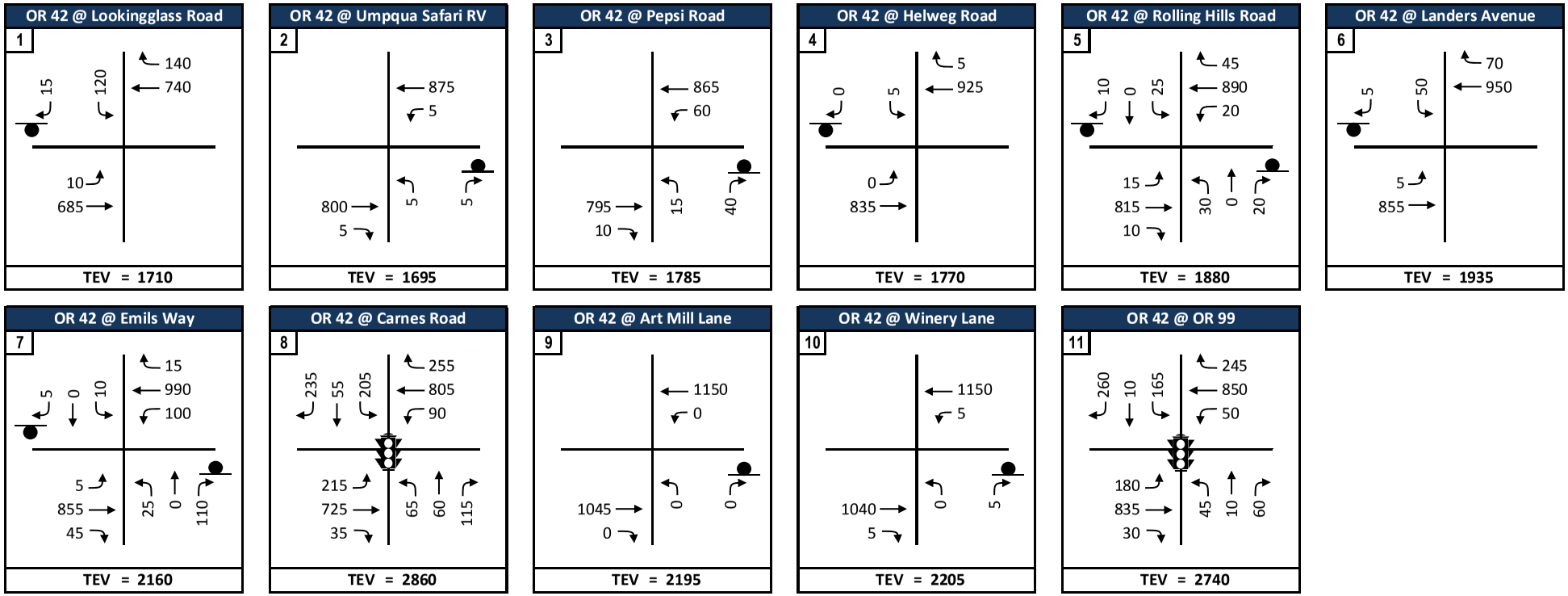
This memo identifies baseline resource information in the study area from a "visual windshield validation" perspective. ODOT will need to undertake detailed studies of specific areas to determine design limitations for specific proposed projects. Potential projects identified in the EMP may require permits, regulatory requirements, or authorizations.

Attachments:

Figure 3-1. Existing (2011) Design Hour Traffic Volumes
Figure 3-2. Existing (2011) Lane Configurations & Traffic Operations
Figure 3-3. OR 42 Crash History (2005 through 2009)
Figure 3-4. Natural Resources
Figure 3-5. Tax Lot Maps
Figure 3-6. Zoning Map Designations

Appendix A. Seasonal Adjustment Factors
Appendix B. Traffic Operations Worksheets
Appendix C. ODOT Crash Data Reports





OR 42 Expressway Management Plan

Legend

- Turning Movement
- ### PM Peak Hour Volume
- TEV: Total Entering Volume
- Signalized Intersection
- STOP-Controlled
- # Intersection Number
- #,### vpd — 2011 Average Daily Traffic Volume (vehicles per day)
- #% Trucks — Truck Percentage of Total Trafffic (Single Unit and Semi-Trailer)

Figure 3-1
Existing (2011)
Design Hour Traffic Volumes

OR 42 @ Lookingglass Road

1

C (0.37)
C (0.37)
NA (0.09)
NA (0.23)
B (0.02)
NA (0.22)

OR 42 @ Umpqua Safari RV

2

NA (0.28)
A (0.01)
NA (0.34)
NA (0.18)
B (0.03)

OR 42 @ Pepsi Road

3

NA (0.29)
B (0.09)
NA (0.27)
NA (0.01)
B (0.08)
B (0.08)

OR 42 @ Helweg Road

4

C (0.02)
NA (0.20)
NA (0.39)
NA (0.00)
NA (0.27)

OR 42 @ Rolling Hills Road

5

C (0.14)
NA (0.21)
NA (0.37)
B (0.03)
B (0.02)
NA (0.34)
NA (0.18)
C (0.17)

OR 42 @ Landers Avenue

6

C (0.20)
C (0.20)
NA (0.24)
NA (0.40)
B (0.01)
NA (0.27)

OR 42 @ Emils Way

7

F (0.24)
NA (0.21)
NA (0.40)
B (0.14)
A (0.01)
NA (0.35)
NA (0.20)
E (0.56)

OR 42 @ Carnes Road

8

C (0.30)
D (0.80)
B (0.18)
B (0.60)
D (0.60)
E (0.92)
B (0.69)
C (0.39)
C (0.23)

Overall = C (0.77)

OR 42 @ Art Mill Lane

9

NA (0.25)
NA (0.00)
NA (0.45)
NA (0.23)
A (0.02)

OR 42 @ Winery Lane

10

NA (0.24)
B (0.01)
NA (0.44)
NA (0.22)
B (0.01)

OR 42 @ OR 99

11

A (0.20)
C (0.03)
C (0.69)
B (0.19)
B (0.63)
C (0.36)
D (0.74)
C (0.87)
C (0.18)
C (0.03)
B (0.07)

Overall = C (0.78)

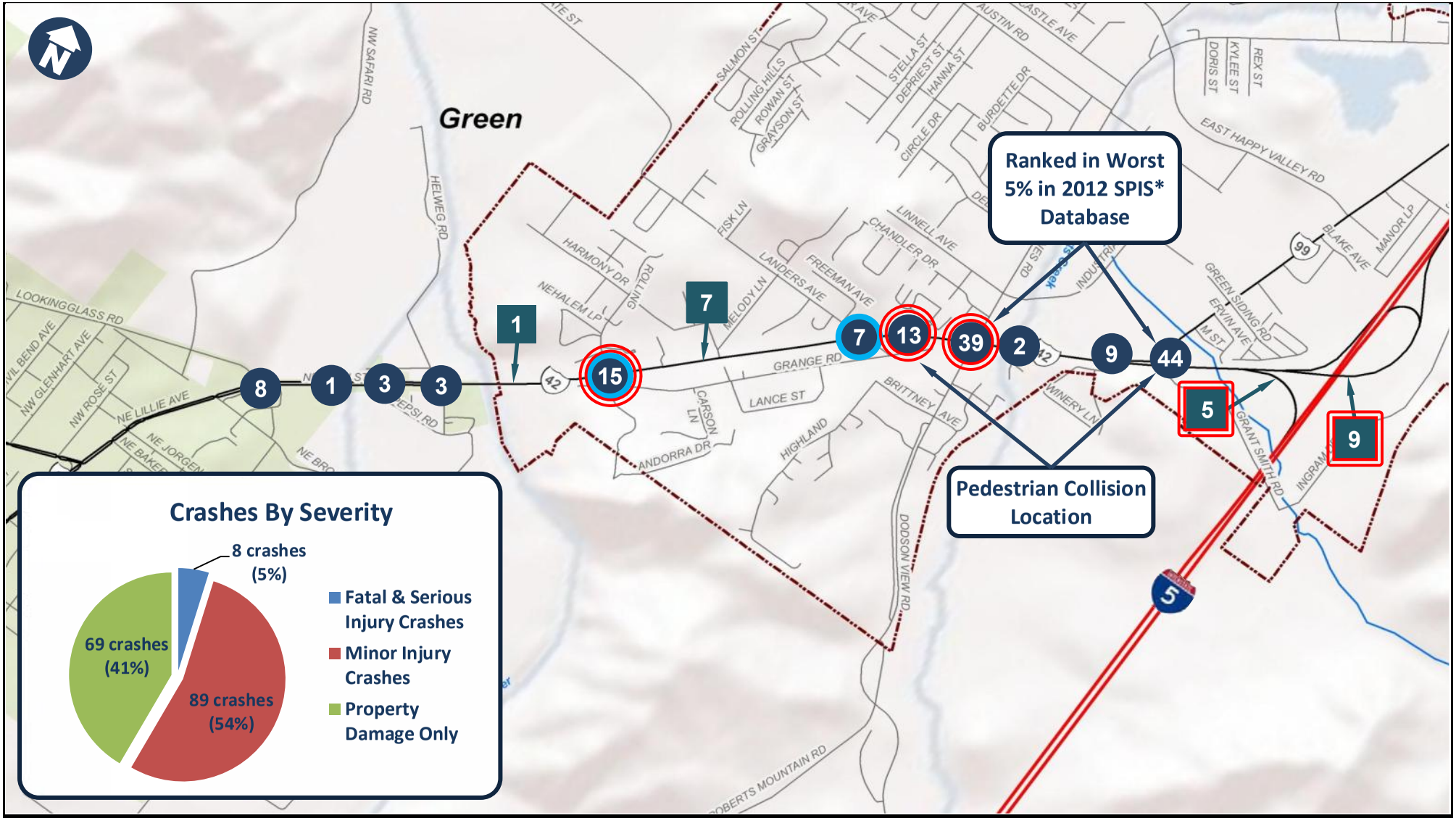
OR 42 Expressway Management Plan

Legend

- Lane Group
- A — Level of Service (LOS)
- 0.00 — Volume-to-Capacity (V/C) Ratio
- NA — LOS not available for free flowing movements
- Signalized Intersection
- STOP-Contr
- # — Intersection Number

Figure 3-2

Existing (2011)
Lane Configurations &
Traffic Operations



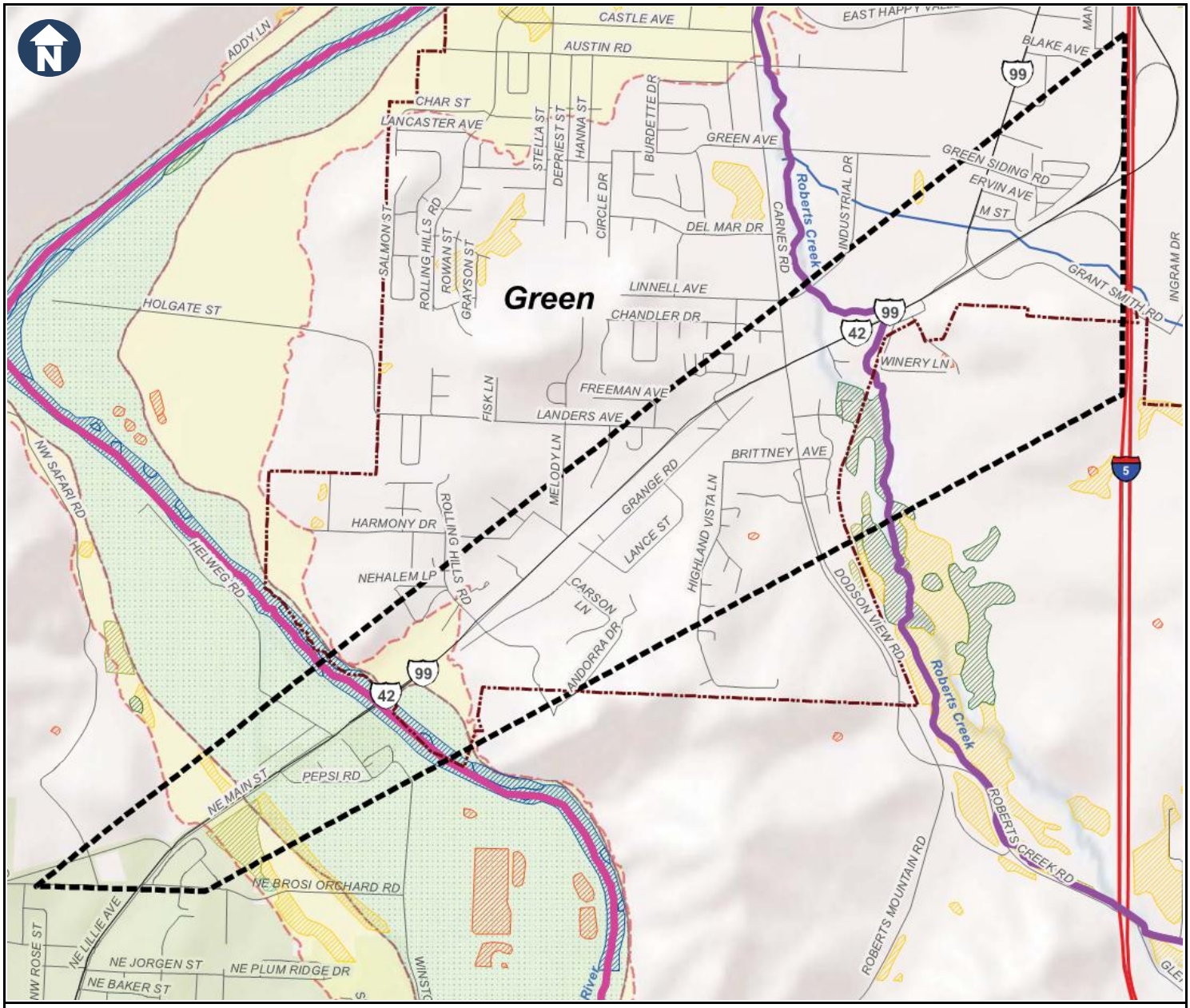
OR 42 Expressway Management Plan

Legend

- # Number of crashes at an intersection
- # Number of crashes on a segment between intersections
- Indicates an incapacitating injury occurred in one or more crashes
- Indicates a fatality occurred in one or more crashes

**The Safety Priority Index System (SPIS) is a method used in Oregon to identify safety issues along state highways. Each year these locations are ranked by assigning a SPIS score based on the frequency and severity of crashes observed. The worst 10% of the index warrant additional analysis.*

Figure 3-3
Summary of Crash History (January 1, 2005 through December 31, 2010)



Legend

- Study Area
- City of Green UUA Boundary
- Winston City Limits
- Interstate
- Oregon Routes
- Roads
- Rivers
- Floodway
- 100-Year Floodplain

Wetland Classifications

- Palustrine, Aquatic
- Palustrine, Emergent
- Palustrine, Forested
- Palustrine, Scrub-Shrub
- Palustrine, Other
- Riverine

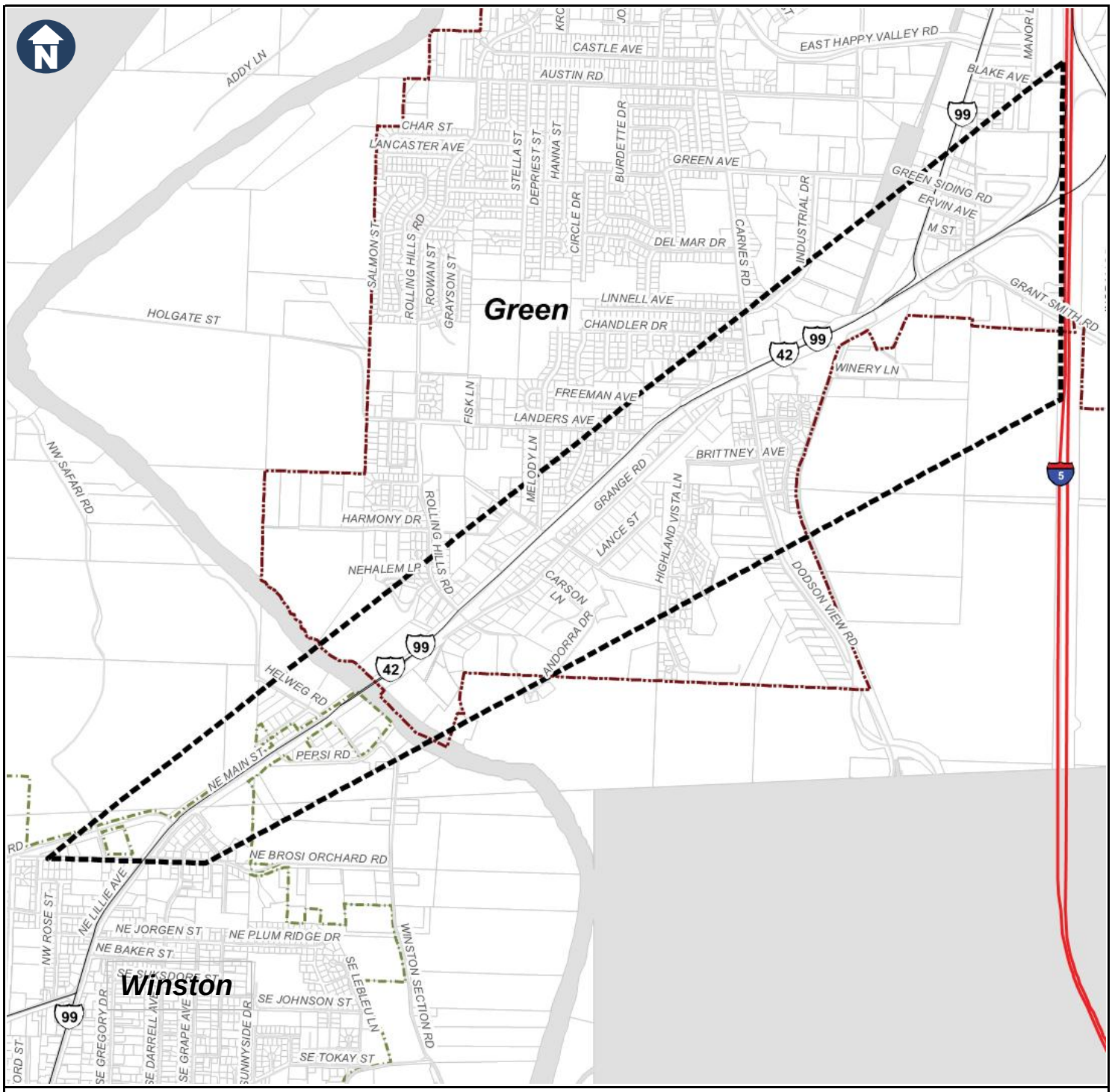
ODFW Fish Habitat

- Coho Salmon, Fall Chinook Salmon, Spring Chinook Salmon, and Winter Steelhead (Existing Habitat)
- Coho Salmon and Winter Steelhead (Existing Habitat)

OR 42 Expressway Management Plan

Data Sources:
Douglas County, Oregon 2011
Oregon Department of Transportation (ODOT), 2009
Oregon Geospatial Enterprise Office (GEO). 2009

Figure 3-4
Natural Resources



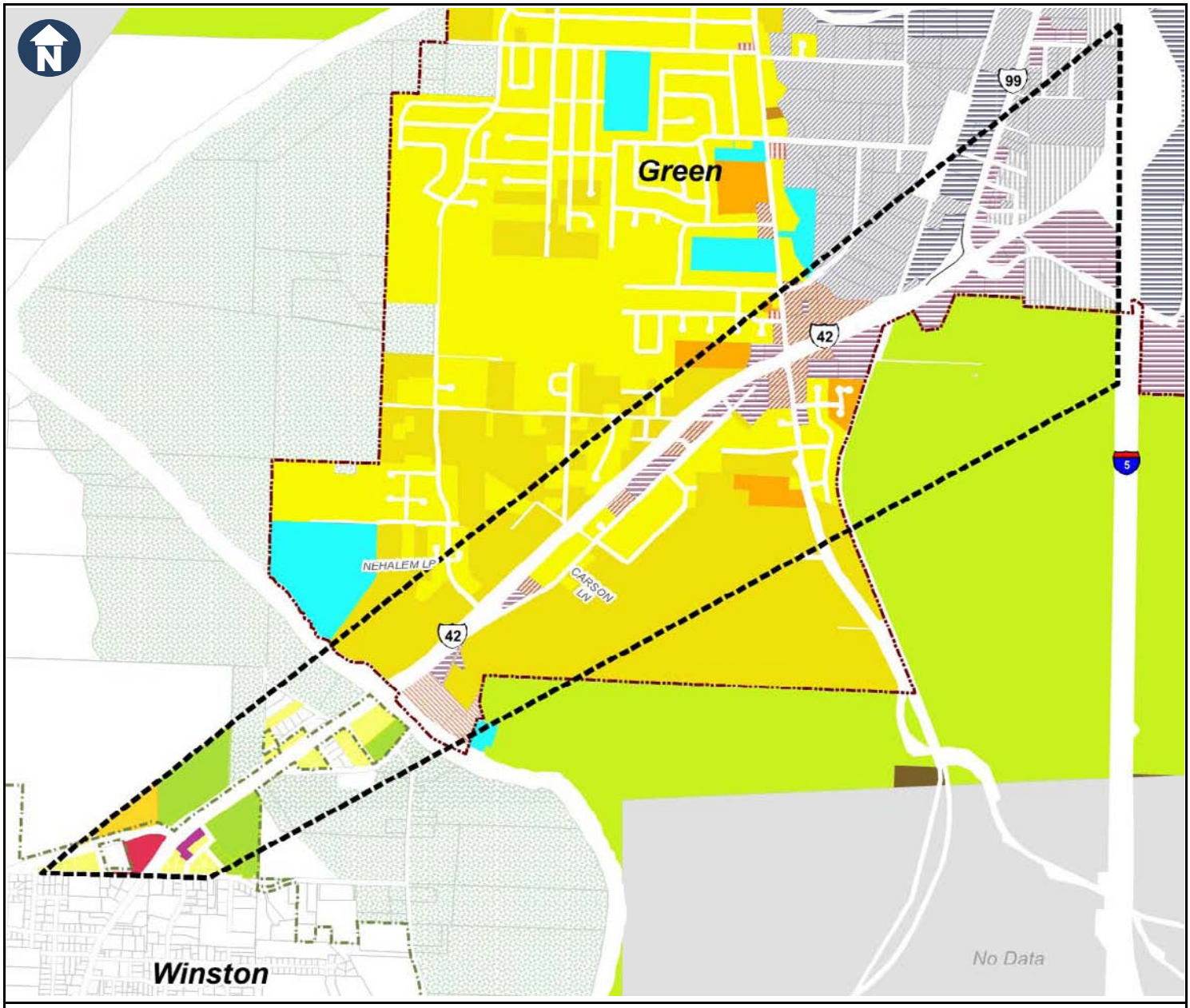
Legend

- Study Area
- City of Green UUA Boundary
- Winston City Limits
- Interstate
- Oregon Routes
- Roads

OR 42 Expressway Management Plan

Data Sources:
Douglas County, Oregon 2011
Oregon Department of Transportation (ODOT), 2009
Oregon Geospatial Enterprise Office (GEO). 2009

Figure 3-5
Tax Lot Maps



Legend

- Study Area
- Green UUA Boundary
- Winston City Limits

City of Winston Zoning

- Ag - Open Space (A-O)
- Office Professional/Commercial (C-OP)
- General Commercial (GC)
- Residential Low Density (RLA)
- Residential High Density (RH)

Douglas County Zoning

- Exclusive Farm Use - Grazing (FG)
- Exclusive Farm Use - Cropland (F1)
- Rural Residential - 5 (5R)
- Rural Residential - 2 (RR)
- Suburban Residential (RS)
- Rural Residential - 1 (R1)
- Rural Residential - 2 (R2)
- Rural Residential - 3 (R3)
- Tourist Commercial (CT)
- Limited Commercial (C1)
- Community Commercial (C2)
- General Comercial (C3)
- Light Industrial (M1)
- Medium Industrial (M2)
- Heavy Industrial (M3)
- Public Reserve (PR)

OR 42 Expressway Management Plan

Data Sources:
Douglas County, Oregon 2011
Oregon Department of Transportation (ODOT), 2009
Oregon Geospatial Enterprise Office (GEO). 2009

Figure 3-6
Zoning Map Designations

Appendix A. Seasonal Adjustment Factors

Project: OR 42 EMP
Job #: ODOT0000-0743
Subject: Seasonal Adjustment Factor Calculations

Commuter Characteristic ATRs
Summer Characteristic ATRs
Douglas County ATRs

DEA Eliminated
TPAU Eliminated

OR 39 @-4.00: Klamath Falls (18-018)

May	AWT	% of ADT
2010	25837	115
2009	25925	113
2008	26777	114
2007	28797	116
2006	26191	115
Average=		115

June	AWT	% of ADT
2010	25903	115
2009	26022	113
2008	26491	113
2007	29643	120
2006	27692	119
Average=		116

Peak Mo.		AWT	% of ADT
August	2010	25903	115
April	2009	26366	115
October	2008	29187	125
June	2007	29643	120
September	2006	29745	128
Average=			121

May Seasonal Factor = 1.05
June Seasonal Factor = 1.04

OR 221 @18.60: Brush College (27-002)

May	AWT	% of ADT
2010	13047	107
2009	12400	103
2008	12698	108
2007	13454	107
2006	13111	107
Average=		106

June	AWT	% of ADT
2010	13437	110
2009	13257	110
2008	12790	108
2007	14310	114
2006	13390	109
Average=		110

Peak Mo.		AWT	% of ADT
August	2010	13511	110
August	2009	13409	112
July	2008	13126	111
June	2007	14310	114
June	2006	13390	109
Average=			111

May Seasonal Factor = 1.05
June Seasonal Factor = 1.01

OR 22 @19.40: Oak Knoll (27-006)

May	AWT	% of ADT
2010	26957	103
2009	27302	104
2008	27906	107
2007	28713	104
2006	26323	101
Average=		104

June	AWT	% of ADT
2010	27480	105
2009	28468	108
2008	27246	106
2007	29384	106
2006	29202	104
Average=		106

Peak Mo.		AWT	% of ADT
August	2010	28253	108
July	2009	28998	110
August	2008	28176	109
August	2007	30383	110
August	2006	29978	107
Average=			109

May Seasonal Factor = 1.05
June Seasonal Factor = 1.03

US 395 @1.77: S. Pendleton (30-008)

May	AWT	% of ADT
2010		
2009	25604	113
2008	25295	113
2007	25470	112
2006	25045	112
Average=		113

June	AWT	% of ADT
2010		
2009	25742	114
2008	25895	115
2007	25611	112
2006	25231	113
Average=		114

Peak Mo.		AWT	% of ADT
	2010		
June	2009	25742	114
June	2008	25895	115
June	2007	25611	112
June	2006	25231	113
Average=			114

May Seasonal Factor = 1.01
June Seasonal Factor = 1.00

OR 11 @34.46: Milton (30-021)

May	AWT	% of ADT
2010	15772	107
2009	16105	109
2008	15627	109
2007	16073	108
2006	15793	106
Average=		108

June	AWT	% of ADT
2010	16308	111
2009	16682	113
2008	15700	110
2007	16726	113
2006	16557	111
Average=		112

Peak Mo.		AWT	% of ADT
June	2010	16308	111
July	2009	16711	114
July	2008	15726	110
June	2007	16726	113
June	2006	16557	111
Average=			112

May Seasonal Factor = 1.04
June Seasonal Factor = 1.00

OR 82 @1.74: Island City (31-003)

May	AWT	% of ADT
2010		
2009	13300	111
2008	13403	113
2007	13873	112
2006	13116	111
Average=		112

June	AWT	% of ADT
2010		
2009	13500	113
2008	13300	112
2007	14000	113
2006	13715	113
Average=		113

Peak Mo.		AWT	% of ADT
	2010		
July	2009	13800	115
July	2008	13500	114
July	2007	14000	113
September	2006	14250	117
Average=			115

May Seasonal Factor = 1.03
June Seasonal Factor = 1.02

OR 221 @18.60: Brush College (27 Too Low
OR 22 @19.40: Oak Knoll (27-006) Too High
OR 82 @1.74: Island City (31-003) Too Low
OR 22 @2.82: North Santiam (24-0 Too High
OR 38 @ 23.65: Scottsburg (10-00 Too Low
I-5 @ 129.75: Roseburg (10-005) Too High
OR 42 @ 70.51: Brockway (10-006 Too Low

Average MAY Seasonal Factor: 1.03 excludes ATRs with volumes more than 10% greater or less than OR 42 based on 2010 ADTs
Average JUNE Seasonal Factor: 1.01 excludes ATRs with volumes more than 10% greater or less than OR 42 based on 2010 ADTs

US 97 @142.41: Lava Butte (09-003)

May	AWT	% of ADT
2010	21156	104
2009	21200	104
2008	22129	108
2007	23796	106
2006	22903	103
Average=		105

June	AWT	% of ADT
2010	23645	116
2009	23400	115
2008	23739	116
2007	26300	117
2006	25573	115
Average=		116

Peak Mo.		AWT	% of ADT
July	2010	26078	128
July	2009	26284	129
July	2008	25683	125
July	2007	27600	123
July	2006	27345	123
Average=			126

May Seasonal Factor = 1.20
June Seasonal Factor = 1.08

OR 22 @2.82: North Santiam (24-004)

May	AWT	% of ADT
2010	25779	103
2009	26237	105
2008	26021	107
2007	27231	105
2006	26918	103
Average=		105

June	AWT	% of ADT
2010	27242	109
2009	27462	110
2008	26464	108
2007	28559	110
2006	28349	109
Average=		109

		AWT	% of ADT
July	2010	28772	116
July	2009	29388	117
August	2008	28131	115
August	2007	29930	115
August	2006	29715	114
Average=			115

May Seasonal Factor = 1.10
June Seasonal Factor = 1.06

OR 22 @ 10.02: Aumsville (24-005)

May	AWT	% of ADT
2010	19651	102
2009	20389	106
2008	20510	107
2007	21626	105
2006	21698	104
Average=		105

June	AWT	% of ADT
2010	20803	108
2009	21358	111
2008	20629	107
2007	22418	109
2006	22714	109
Average=		109

Peak Mo.		AWT	% of ADT
August	2010	22534	116
July	2009	23128	120
August	2008	22441	117
August	2007	23976	116
August	2006	23928	114
Average=			117

May Seasonal Factor = 1.11
June Seasonal Factor = 1.07

OR 38 @ 23.65: Scottsburg (10-003)

May	AWT	% of ADT
2010	2943	89
2009	3062	92
2008	2929	95
2007	3321	95
2006	3123	91
Average=		92

June	AWT	% of ADT
2010	3377	102
2009	3341	101
2008	3110	100
2007	3569	102
2006	3415	100
Average=		101

Peak Mo.		AWT	% of ADT
August	2010	4212	127
August	2009	4101	124
July	2008	3742	121
August	2007	4238	121
July	2006	4200	122
Average=			123

May Seasonal Factor = 1.33
June Seasonal Factor = 1.22

I-5 @ 129.75: Roseburg (10-005)

May	AWT	% of ADT
2010	30500	101
2009	30580	102
2008	29913	103
2007	32006	100
2006	30699	97
Average=		101

June	AWT	% of ADT
2010	33500	111
2009	33194	111
2008	31574	108
2007	35309	110
2006	33586	107
Average=		109

Peak Mo.		AWT	% of ADT
July	2010	35592	118
July	2009	35214	118
August	2008	34300	118
August	2007	37819	118
August	2006	36249	115
Average=			117

May Seasonal Factor = 1.17
June Seasonal Factor = 1.07

OR 42 @ 70.51: Brockway (10-006)

May	AWT	% of ADT
2010	5725	102
2009	5642	102
2008	5745	104
2007	6303	105
2006	6407	103
Average=		103

June	AWT	% of ADT
2010	6130	109
2009	5986	108
2008	5874	106
2007	6651	110
2006	6700	108
Average=		108

Peak Mo.		AWT	% of ADT
August	2010	6724	119
July	2009	6574	118
July	2008	6448	117
August	2007	6955	115
August	2006	6999	113
Average=			116

May Seasonal Factor = 1.13
June Seasonal Factor = 1.08

I-5 @ 98.82: Canyonville (10-008)

May	AWT	% of ADT
2010	18986	97
2009	19208	99
2008	18259	99
2007		
2006		
Average=		98

June	AWT	% of ADT
2010	21844	112
2009	20967	108
2008	20020	108
2007		
2006		
Average=		109

Peak Mo.		AWT	% of ADT
July	2010	23728	121
July	2009	23600	122
August	2008	21870	118
August	2007		
August	2006		
Average=			120

May Seasonal Factor = 1.22
June Seasonal Factor = 1.10

Average MAY Seasonal Factor: 1.15 excludes ATRs with volumes more than 10% greater or less than OR 42 based on 2010 ADTs
Average JUNE Seasonal Factor: 1.08 excludes ATRs with volumes more than 10% greater or less than OR 42 based on 2010 ADTs

Average MAY Seasonal Factor: 1.22 excludes ATRs with volumes more than 10% greater or less than OR 42 based on 2010 ADTs
Average JUNE Seasonal Factor: 1.10 excludes ATRs with volumes more than 10% greater or less than OR 42 based on 2010 ADTs

2010 SEASONAL TREND TABLE (Printed: 07/07/10)

TREND	1-Jan	15-Jan	1-Feb	15-Feb	1-Mar	15-Mar	1-Apr	15-Apr	1-May	15-May	1-Jun	15-Jun	1-Jul	15-Jul	1-Aug	15-Aug	1-Sep	15-Sep	1-Oct	15-Oct	1-Nov	15-Nov	1-Dec	15-Dec	Peak Period
INTERSTATE URBANIZED	1.00	1.01	0.99	0.97	0.96	0.95	0.94	0.93	0.94	0.94	0.93	0.91	0.91	0.91	0.91	0.91	0.93	0.94	0.95	0.95	0.96	0.98	0.98	0.99	0.91
INTERSTATE NONURBANIZED	1.26	1.33	1.28	1.23	1.16	1.10	1.08	1.06	1.03	1.00	0.95	0.91	0.88	0.84	0.85	0.85	0.90	0.94	0.99	1.04	1.05	1.06	1.12	1.18	0.84
COMMUTER	1.01	1.02	1.01	0.99	0.98	0.98	0.95	0.93	0.93	0.93	0.92	0.90	0.90	0.90	0.90	0.90	0.91	0.93	0.93	0.94	0.96	0.99	1.00	1.01	0.90
COASTAL DESTINATION	1.20	1.22	1.20	1.18	1.14	1.09	1.09	1.08	1.06	1.04	0.99	0.94	0.88	0.82	0.82	0.83	0.88	0.94	1.01	1.07	1.12	1.16	1.17	1.18	0.82
COASTAL DESTINATION ROUTE	1.46	1.53	1.49	1.44	1.36	1.28	1.24	1.20	1.15	1.09	1.03	0.96	0.86	0.76	0.77	0.77	0.85	0.93	1.06	1.18	1.25	1.32	1.36	1.39	0.76
AGRICULTURE	1.16	1.18	1.15	1.13	1.11	1.08	1.04	0.99	0.96	0.94	0.92	0.90	0.89	0.88	0.87	0.87	0.89	0.91	0.92	0.93	0.97	1.01	1.07	1.14	0.87
RECREATIONAL SUMMER	1.82	1.95	1.90	1.84	1.73	1.63	1.51	1.40	1.22	1.03	0.95	0.87	0.80	0.74	0.75	0.77	0.82	0.88	1.00	1.11	1.30	1.48	1.59	1.69	0.74
RECREATIONAL SUMMER WINTER	1.22	1.35	1.35	1.35	1.36	1.37	1.53	1.69	1.64	1.60	1.35	1.09	0.97	0.85	0.91	0.96	1.11	1.27	1.61	1.96	1.74	1.51	1.30	1.08	0.85
RECREATIONAL WINTER	0.98	1.07	1.16	1.25	1.07	0.89	1.30	1.72	2.26	2.80	2.23	1.66	1.42	1.19	1.27	1.35	1.48	1.61	2.05	2.49	2.10	1.71	1.31	0.90	0.89
SUMMER	1.19	1.23	1.20	1.17	1.14	1.12	1.07	1.02	0.99	0.95	0.92	0.89	0.86	0.83	0.84	0.84	0.88	0.91	0.95	0.99	1.04	1.09	1.12	1.16	0.83
SUMMER < 2500	1.34	1.41	1.37	1.33	1.25	1.18	1.10	1.03	0.96	0.90	0.87	0.83	0.81	0.80	0.81	0.82	0.83	0.84	0.89	0.93	1.01	1.08	1.18	1.27	0.80

***Seasonal Trend Table factors are based on previous year ATR data and the table is updated yearly.**

Average MAY Seasonal Factor based on COMMUTER Trend: 1.03
Average JUNE Seasonal Factor based on COMMUTER Trend: 1.01

Average MAY Seasonal Factor based on SUMMER Trend: 1.17
Average JUNE Seasonal Factor based on SUMMER Trend: 1.09

RECOMMENDATIONS: Weighted Average of Commuter & Summer

Average MAY Seasonal Factor based on ATR Characteritics: **1.06** 75% Commuter
Average JUNE Seasonal Factor based on ATR Characteristics **1.03** 25% Summer

RECOMMENDATIONS FROM TPAU: Weighted Average of Commuter & Summer

Average of 30-021 (Milton-Freewater) and 24-005 (Aumsville) for MAY: **1.07** 50% Commuter
Average of 30-021 (Milton-Freewater) and 24-005 (Aumsville) for June: **1.04** 50% Summer

Project: OR 42 EMP
Job #: ODOT0000-0743
Subject: ATR Trend Table from ODOT

2010 ATR CHARACTERISTIC TABLE (Printed: 07/07/10)											
SEASONAL TRAFFIC TREND	**AREA TYPE**	**# OF LANES**	**WEEKLY TRAFFIC TREND**	**AADT**	**OHP CLASSIFICATION**	**ATR**	**COUNTY**	**HIGHWAY ROUTE, NAME, & LOCATION**	**MP**	**STATE HIGHWAY NUMBER**	
SUMMER	URBANIZED	4	WEEKDAY	20400	STATEWIDE HIGHWAY	**09-003**	DESCHUTES	US 97, THE DALLES-CA HWY, 0.17 MILES SOUTH OF CHINA HAT ROAD	142.41	4	
COMMUTER	SMALL URBAN	5	WEEKDAY	23000	REGIONAL HIGHWAY	**18-018**	KLAMATH	OR 39, KLAMATH FALLS-MALLIN HWY, 0.46 MILES SOUTH OF MAIN STREET	-4.00	50	
SUMMER	URBANIZED	5	WEEKDAY	25000	STATEWIDE HIGHWAY	**24-004**	MARION	OR 22, NORTH SANTIAM HWY, 0.91 MILES EAST OF LANCASTER DRIVE INTERCHANGE	2.82	162	Too High
SUMMER	URBANIZED	4	WEEKDAY	19300	STATEWIDE HIGHWAY	**24-005**	MARION	OR 22, NORTH SANTIAM HWY, 3.35 MILES EAST OF SILVER CREEK FALLS HWY	10.02	162	
COMMUTER	URBANIZED	2	WEEKDAY	12000	REGIONAL HIGHWAY	**27-002**	POLK	OR 221, SALEM-DAYTON HWY, 0.09 MILES NORTH OF BRUSH COLLEGE RD N.W.	18.60	150	Too Low
COMMUTER	URBANIZED	5	WEEKDAY	26300	STATEWIDE HIGHWAY	**27-006**	POLK	OR 22, WILLAMINA-SALEM HWY, 0.97 MILES WEST OF INDEPENDENCE HWY	19.40	30	Too High
COMMUTER	SMALL URBAN	5	WEEKDAY	22600	STATEWIDE HIGHWAY	**30-008**	UMATILLA	US395, PENDLETON-JOHN DAY HWY, 0.09 MILES SOUTH OF OLD OREGON TRAIL	1.77	28	
COMMUTER	SMALL URBAN	5	WEEKDAY	14700	STATEWIDE HIGHWAY	**30-021**	UMATILLA	OR11, OREGON-WASHINGTON HWY, 0.86 MILES SOUTH OF OREGON-WASHINGTON STATE LINE	34.46	8	
COMMUTER	SMALL URBAN FRINGE	5	WEEKDAY	12000	STATEWIDE HIGHWAY	**31-003**	UNION	OR82, WALLOWA LAKE HWY, 0.82 MILES EAST OF OLD OREGON TRAIL HWY	1.74	10	Too Low

Project: OR 42 EMP
Job #: ODOT0000-0743
Subject: Seasonal Adjustment Factor Calculations

5-YEAR GROWTH TREND FROM ADT VOLUMES

Mile point	Count Location	Average Annual Daily Traffic Volume						Total	Average
		2005	2006	2007	2008	2009	2010	Change	Annual
73.86	0.02 mile south of Safari Road	17,500	17,800	17,800	16,300	14,700	14,900	-14.9%	-3.2%
74.41	0.06 mile south of Umpqua River	19,800	21,200	21,200	19,400	16,800	17,100	-13.6%	-2.9%
75.7	0.02 mile southwest of Southwest Carnes Road (Kelley's Corner)	22,600	24,000	24,000	22,000	19,300	19,600	-13.3%	-2.8%
76.05	0.02 mile southwest of Winery Lane	23,200	24,800	24,800	22,800	20,500	20,800	-10.3%	-2.2%
76.4	0.25 mile southwest of Pacific Highway (I-5)	22,400	25,200	25,200	23,100	22,400	22,700	1.3%	0.3%

+10%	13410
-10%	24970

All rates were assumed to be linear.

ODOT 2029 FUTURE VOLUME TABLE

Mile point	Count Location	2009	2029	Total	Annual	
73.86	0.02 mile south of Safari Road	14,700	22,200	151%	2.55%	MODEL
74.41	0.06 mile south of Umpqua River	16,800	25,600	152%	2.62%	MODEL
75.7	0.02 mile southwest of Southwest Carnes Road (Kelley's Corner)	19,300	28,900	150%	2.49%	MODEL
76.05	0.02 mile southwest of Winery Lane	20,500	29,700	145%	2.24%	MODEL
76.4	0.25 mile southwest of Pacific Highway (I-5)	22,400	34,500	154%	2.70%	MODEL

STUDY REGION ATRS

Location:	**(10-004)**			
Year	Volume	22	Yearly Rate	
2007	1000			
2029	1100	110%	0.45%	
r^2=	MODEL			
Location:	**(10-005)**			
Year	Volume	21	Yearly Rate	
2008	29100			
2029	42700	147%	2.23%	
r^2=	MODEL			
Location:	**(10-006)**			
Year	Volume	20	Yearly Rate	
2009	5600			
2029	7700	138%	1.88%	
r^2=	0.8022			
Location:	**(10-008)**			
Year	Volume	21	Yearly Rate	
2008	18500			
2029	25400	137%	1.78%	
r^2=	MODEL			

Average Growth per year	**1.58%**

Location:	**Klamath Falls (18-018)**			
Year	Volume	22	Yearly Rate	
2007	24800			
2029	30500	123%	1.04%	
r^2=	MODEL			
Location:	**Brush College (27-002)**			
Year	Volume	21	Yearly Rate	
2008	11800			
2029	18200	154%	2.58%	
r^2=	MODEL			
Location:	**Oak Knoll (27-006)**			
Year	Volume	21	Yearly Rate	
2008	25800			
2029	25900	100%	0.02%	
r^2=	MODEL			
Location:	**S. Pendleton (30-008)**			
Year	Volume	20	Yearly Rate	
2009	22600			
2029	29600	131%	1.55%	
r^2=	MODEL			
Location:	**Milton (30-021)**			
Year	Volume	22	Yearly Rate	
2007	14863			
2029	20400	137%	1.69%	
r^2=	0.8022			
Location:	**Island City (31-003)**			
Year	Volume	22	Yearly Rate	
2007	12400			
2029	16400	132%	1.47%	
r^2=	MODEL			

Average Growth per year	**1.39%**

Appendix B. Traffic Operations Worksheets

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	685	740	140	120	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	737	796	151	129	16
Pedestrians		1	1		1	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	0		0	
Right turn flare (veh)						1
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	947				1187	400
vC1, stage 1 conf vol					797	
vC2, stage 2 conf vol					391	
vCu, unblocked vol	947				1187	400
tC, single (s)	4.3				6.9	6.9
tC, 2 stage (s)					5.9	
tF (s)	2.3				3.5	3.3
p0 queue free %	98				64	97
cM capacity (veh/h)	678				360	599

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	11	368	368	398	398	151	145
Volume Left	11	0	0	0	0	0	129
Volume Right	0	0	0	0	0	151	16
cSH	678	1700	1700	1700	1700	1700	390
Volume to Capacity	0.02	0.22	0.22	0.23	0.23	0.09	0.37
Queue Length 95th (ft)	1	0	0	0	0	0	42
Control Delay (s)	10.4	0.0	0.0	0.0	0.0	0.0	19.6
Lane LOS	B						C
Approach Delay (s)	0.1			0.0			19.6
Approach LOS							C

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	0	0	0	860	955	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	0	915	1016	0
Pedestrians	1			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	0	
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1475	510	1017			
vC1, stage 1 conf vol	1017					
vC2, stage 2 conf vol	458					
vCu, unblocked vol	1475	510	1017			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	283	508	677			

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2
Volume Total	0	0	457	457	677	339
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.27	0.27	0.40	0.20
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	800	5	5	875	5	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	879	5	5	962	5	5
Pedestrians	1			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	0	
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			886		1376	444
vC1, stage 1 conf vol					883	
vC2, stage 2 conf vol					493	
vCu, unblocked vol			886		1376	444
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	99
cM capacity (veh/h)			759		322	560

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	586	299	5	481	481	11
Volume Left	0	0	5	0	0	5
Volume Right	0	5	0	0	0	5
cSH	1700	1700	759	1700	1700	409
Volume to Capacity	0.34	0.18	0.01	0.28	0.28	0.03
Queue Length 95th (ft)	0	0	1	0	0	2
Control Delay (s)	0.0	0.0	9.8	0.0	0.0	14.1
Lane LOS			A			B
Approach Delay (s)	0.0		0.1			14.1
Approach LOS						B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	795	10	60	865	15	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	903	11	68	983	17	45
Pedestrians	1			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	0	
Right turn flare (veh)						1
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			916		1533	454
vC1, stage 1 conf vol					904	
vC2, stage 2 conf vol					629	
vCu, unblocked vol			916		1533	454
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			91		94	92
cM capacity (veh/h)			721		286	552

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	452	452	11	68	491	491	62
Volume Left	0	0	0	68	0	0	17
Volume Right	0	0	11	0	0	0	45
cSH	1700	1700	1700	721	1700	1700	760
Volume to Capacity	0.27	0.27	0.01	0.09	0.29	0.29	0.08
Queue Length 95th (ft)	0	0	0	8	0	0	7
Control Delay (s)	0.0	0.0	0.0	10.5	0.0	0.0	13.8
Lane LOS				B			B
Approach Delay (s)	0.0			0.7			13.8
Approach LOS							B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	835	925	5	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	908	1005	5	5	0
Pedestrians		1	1		1	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1012				1464	507
vC1, stage 1 conf vol					1009	
vC2, stage 2 conf vol					455	
vCu, unblocked vol	1012				1464	507
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	680				286	510

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	0	454	454	670	341	5
Volume Left	0	0	0	0	0	5
Volume Right	0	0	0	0	5	0
cSH	1700	1700	1700	1700	1700	286
Volume to Capacity	0.00	0.27	0.27	0.39	0.20	0.02
Queue Length 95th (ft)	0	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	17.8
Lane LOS						C
Approach Delay (s)	0.0			0.0		17.8
Approach LOS						C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	815	10	20	890	45	30	0	20	25	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	16	867	11	21	947	48	32	0	21	27	0	11
Pedestrians		1			1			1			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	996			879			1433	1943	441	1502	1925	499
vC1, stage 1 conf vol							905	905		1014	1014	
vC2, stage 2 conf vol							528	1038		488	911	
vCu, unblocked vol	996			879			1433	1943	441	1502	1925	499
tC, single (s)	4.1			4.4			7.6	6.5	7.2	7.6	6.5	6.9
tC, 2 stage (s)							6.6	5.5		6.6	5.5	
tF (s)	2.2			2.4			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	98			97			87	100	96	88	100	98
cM capacity (veh/h)	690			676			249	220	524	219	224	516

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	16	578	300	21	631	363	53	37
Volume Left	16	0	0	21	0	0	32	27
Volume Right	0	0	11	0	0	48	21	11
cSH	690	1700	1700	676	1700	1700	315	262
Volume to Capacity	0.02	0.34	0.18	0.03	0.37	0.21	0.17	0.14
Queue Length 95th (ft)	2	0	0	2	0	0	15	12
Control Delay (s)	10.3	0.0	0.0	10.5	0.0	0.0	18.8	21.0
Lane LOS	B			B			C	C
Approach Delay (s)	0.2			0.2			18.8	21.0
Approach LOS							C	C

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	855	950	70	50	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	5	910	1011	74	53	5
Pedestrians		1	1		1	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	0		0	
Right turn flare (veh)						2
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1086				1515	545
vC1, stage 1 conf vol					1049	
vC2, stage 2 conf vol					466	
vCu, unblocked vol	1086				1515	545
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				80	99
cM capacity (veh/h)	638				273	482

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	5	455	455	674	411	59
Volume Left	5	0	0	0	0	53
Volume Right	0	0	0	0	74	5
cSH	638	1700	1700	1700	1700	300
Volume to Capacity	0.01	0.27	0.27	0.40	0.24	0.20
Queue Length 95th (ft)	1	0	0	0	0	18
Control Delay (s)	10.7	0.0	0.0	0.0	0.0	20.6
Lane LOS	B					C
Approach Delay (s)	0.1			0.0		20.6
Approach LOS						C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	855	45	100	990	15	25	0	110	10	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	5	881	46	103	1021	15	26	0	113	10	0	5
Pedestrians		1			1			1			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					951							
pX, platoon unblocked	0.85						0.85	0.85		0.85	0.85	0.85
vC, conflicting volume	1037			929			1639	2159	466	1801	2175	520
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	678			929			1390	2006	466	1582	2024	67
tC, single (s)	4.1			4.1			7.6	6.5	6.9	7.5	6.5	7.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	99			86			65	100	79	76	100	99
cM capacity (veh/h)	768			731			74	42	542	43	41	798

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	5	588	340	103	680	356	139	15
Volume Left	5	0	0	103	0	0	26	10
Volume Right	0	0	46	0	0	15	113	5
cSH	768	1700	1700	731	1700	1700	250	63
Volume to Capacity	0.01	0.35	0.20	0.14	0.40	0.21	0.56	0.24
Queue Length 95th (ft)	1	0	0	12	0	0	77	21
Control Delay (s)	9.7	0.0	0.0	10.7	0.0	0.0	36.0	79.5
Lane LOS	A			B			E	F
Approach Delay (s)	0.1			1.0			36.0	79.5
Approach LOS							E	F

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	215	725	35	90	805	255	65	60	115	205	55	235
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	*0.71		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.90		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	2329		1599	3167	1413	1598	1495		1613	1486	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.38	1.00		0.58	1.00	
Satd. Flow (perm)	1630	2329		1599	3167	1413	639	1495		981	1486	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	219	740	36	92	821	260	66	61	117	209	56	240
RTOR Reduction (vph)	0	2	0	0	0	148	0	86	0	0	176	0
Lane Group Flow (vph)	219	774	0	92	821	112	66	92	0	209	120	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Heavy Vehicles (%)	2%	6%	3%	4%	5%	3%	4%	2%	6%	3%	4%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8			4		
Actuated Green, G (s)	11.1	34.0		7.3	30.2	30.2	19.8	19.8		19.8	19.8	
Effective Green, g (s)	11.1	36.5		7.3	32.7	32.7	20.3	20.3		20.3	20.3	
Actuated g/C Ratio	0.15	0.48		0.10	0.43	0.43	0.27	0.27		0.27	0.27	
Clearance Time (s)	4.0	6.5		4.0	6.5	6.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	5.0		2.5	5.0	5.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	238	1117		153	1361	607	170	399		262	396	
v/s Ratio Prot	c0.13	c0.33		0.06	0.26			0.06			0.08	
v/s Ratio Perm						0.08	0.10			c0.21		
v/c Ratio	0.92	0.69		0.60	0.60	0.18	0.39	0.23		0.80	0.30	
Uniform Delay, d1	32.1	15.4		33.0	16.7	13.4	22.8	21.8		26.0	22.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	37.3	3.5		5.5	2.0	0.7	1.1	0.2		15.0	0.3	
Delay (s)	69.4	19.0		38.5	18.7	14.1	23.9	22.0		41.0	22.6	
Level of Service	E	B		D	B	B	C	C		D	C	
Approach Delay (s)		30.1			19.2			22.5			30.2	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1045	0	0	1150	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1148	0	0	1264	0	0
Pedestrians	1			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	0	
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)	609					
pX, platoon unblocked			0.81		0.81	0.81
vC, conflicting volume			1149		1572	576
vC1, stage 1 conf vol					1149	
vC2, stage 2 conf vol					422	
vCu, unblocked vol			726		1245	22
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			710		322	853

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	766	383	0	421	421	421	0
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.45	0.23	0.00	0.25	0.25	0.25	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							A
Approach Delay (s)	0.0		0.0				0.0
Approach LOS							A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1040	5	5	1150	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	1118	5	5	1237	0	5
Pedestrians	1			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	0	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)				747		
pX, platoon unblocked					0.89	
vC, conflicting volume			1125		1546	564
vC1, stage 1 conf vol					1122	
vC2, stage 2 conf vol					424	
vCu, unblocked vol			1125		1183	564
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	99
cM capacity (veh/h)			616		264	468

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	746	378	5	412	412	412	5
Volume Left	0	0	5	0	0	0	0
Volume Right	0	5	0	0	0	0	5
cSH	1700	1700	616	1700	1700	1700	468
Volume to Capacity	0.44	0.22	0.01	0.24	0.24	0.24	0.01
Queue Length 95th (ft)	0	0	1	0	0	0	1
Control Delay (s)	0.0	0.0	10.9	0.0	0.0	0.0	12.8
Lane LOS			B				B
Approach Delay (s)	0.0		0.0				12.8
Approach LOS							B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	835	30	50	850	245	45	10	60	165	10	260
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	*0.63		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1446	2115		1231	3228	1360	1510	1591	1240	1470	1716	1373
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	1446	2115		1231	3228	1360	1193	1591	1240	1161	1716	1373
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	191	888	32	53	904	261	48	11	64	176	11	277
RTOR Reduction (vph)	0	1	0	0	0	145	0	0	33	0	0	0
Lane Group Flow (vph)	191	919	0	53	904	116	48	11	31	176	11	277
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Heavy Vehicles (%)	15%	3%	21%	35%	3%	7%	10%	10%	20%	13%	2%	7%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	pt+ov	Perm	NA	Free
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases						6	8			4		Free
Actuated Green, G (s)	13.1	35.9		7.8	31.6	31.6	16.9	16.9	28.7	16.9	16.9	76.6
Effective Green, g (s)	13.6	38.4		9.3	34.1	34.1	16.9	16.9	28.7	16.9	16.9	76.6
Actuated g/C Ratio	0.18	0.50		0.12	0.45	0.45	0.22	0.22	0.37	0.22	0.22	1.00
Clearance Time (s)	4.5	6.5		5.5	6.5	6.5	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	5.0		3.0	5.0	5.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	257	1060		149	1437	605	263	351	465	256	379	1373
v/s Ratio Prot	c0.13	c0.43		0.04	0.28			0.01	0.03		0.01	
v/s Ratio Perm						0.09	0.04			c0.15		0.20
v/c Ratio	0.74	0.87		0.36	0.63	0.19	0.18	0.03	0.07	0.69	0.03	0.20
Uniform Delay, d1	29.8	16.8		30.9	16.4	12.9	24.2	23.4	15.4	27.4	23.4	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.5	9.5		1.5	2.1	0.7	0.2	0.0	0.0	6.8	0.0	0.3
Delay (s)	40.3	26.4		32.4	18.5	13.6	24.5	23.5	15.4	34.3	23.4	0.3
Level of Service	D	C		C	B	B	C	C	B	C	C	A
Approach Delay (s)		28.8			18.0			19.7			13.8	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

3: OR 42 Performance by movement

Movement	NET	NER	SWT	All
Delay / Veh (s)	6.1	3.6	0.7	3.2

10: OR 42 & Lookingglass Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Delay / Veh (s)	6.9	1.2	1.0	0.5	29.3	19.1	3.4

16: OR 42 & Heatherwood Ln Performance by movement

Movement	NET	SWT	All
Delay / Veh (s)	0.7	0.6	0.6

19: OR 42 & Melody Ln/Jackie Ave Performance by movement

Movement	NET	SWT	All
Delay / Veh (s)	0.5	1.5	1.0

20: Umpqua Safari & OR 42 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Delay / Veh (s)	0.7	0.4	2.8	0.7	10.9	6.0	0.8

30: Pepsi Rd & OR 42 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Delay / Veh (s)	0.7	0.2	4.5	0.8	19.7	10.1	1.2

31: Performance by movement

Movement	EBT	WBT	SWR	All
Delay / Veh (s)	2.9	11.6	5.9	5.1

40: OR 42 & Helweg Rd Performance by movement

Movement	EBT	WBT	WBR	SBL	All
Delay / Veh (s)	0.5	1.7	2.0	14.1	1.2

50: Andorra Dr/Rolling Hills Rd & OR 42 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Delay / Veh (s)	5.2	1.6	1.5	4.2	1.2	0.5	18.2	7.3	21.4	11.3	2.0

60: OR 42 & Landers Ave Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Delay / Veh (s)	11.8	1.7	1.4	0.8	36.4	14.0	2.5

70: Emils Way & OR 42 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Delay / Veh (s)	8.0	1.9	0.3	15.0	4.7	4.6	34.3	16.9	40.6	16.1	5.0

80: Carnes Rd & OR 42 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Delay / Veh (s)	122.4	22.2	10.2	37.6	24.1	9.4	28.7	23.3	12.9	33.5	25.3	15.8

80: Carnes Rd & OR 42 Performance by movement

Movement	All
Delay / Veh (s)	29.6

90: Art Mill Ln & OR 42 Performance by movement

Movement	EBT	WBT	All
Delay / Veh (s)	4.8	1.7	3.2

100: Winery Ln & OR 42 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBR	All
Delay / Veh (s)	6.9	0.3	23.2	5.9	6.8	6.4

110: Grant Smith Rd/OR 99 & OR 42 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Delay / Veh (s)	44.3	32.7	8.3	33.1	17.9	9.0	29.6	24.4	6.7	35.3	27.8	8.6

110: Grant Smith Rd/OR 99 & OR 42 Performance by movement

Movement	All
Delay / Veh (s)	23.6

Total Network Performance

Delay / Veh (s)	56.9

3: OR 42 Performance by approach

Approach	NE	SW	All
Delay / Veh (s)	5.8	0.7	3.2

10: OR 42 & Lookingglass Rd Performance by approach

Approach	EB	WB	SB	All
Delay / Veh (s)	1.3	1.0	28.2	3.4

16: OR 42 & Heatherwood Ln Performance by approach

Approach	NE	SW	All
Delay / Veh (s)	0.7	0.6	0.6

19: OR 42 & Melody Ln/Jackie Ave Performance by approach

Approach	NE	SW	All
Delay / Veh (s)	0.5	1.5	1.0

20: Umpqua Safari & OR 42 Performance by approach

Approach	EB	WB	NB	All
Delay / Veh (s)	0.7	0.8	8.8	0.8

30: Pepsi Rd & OR 42 Performance by approach

Approach	EB	WB	NB	All
Delay / Veh (s)	0.6	1.0	12.3	1.2

31: Performance by approach

Approach	EB	WB	SW	All
Delay / Veh (s)	2.9	11.6	5.9	5.1

40: OR 42 & Helweg Rd Performance by approach

Approach	EB	WB	SB	All
Delay / Veh (s)	0.5	1.7	14.1	1.2

50: Andorra Dr/Rolling Hills Rd & OR 42 Performance by approach

Approach	EB	WB	NB	SB	All
Delay / Veh (s)	1.6	1.2	13.4	17.6	2.0

60: OR 42 & Landers Ave Performance by approach

Approach	EB	WB	SB	All
Delay / Veh (s)	1.8	1.4	35.2	2.5

70: Emils Way & OR 42 Performance by approach

Approach	EB	WB	NB	SB	All
Delay / Veh (s)	1.8	5.6	19.5	33.1	5.0

80: Carnes Rd & OR 42 Performance by approach

Approach	EB	WB	NB	SB	All
Delay / Veh (s)	43.5	21.9	19.8	24.0	29.6

90: Art Mill Ln & OR 42 Performance by approach

Approach	EB	WB	All
Delay / Veh (s)	4.8	1.7	3.2

100: Winery Ln & OR 42 Performance by approach

Approach	EB	WB	NB	All
Delay / Veh (s)	6.9	5.9	6.8	6.4

110: Grant Smith Rd/OR 99 & OR 42 Performance by approach

Approach	EB	WB	NB	SB	All
Delay / Veh (s)	33.9	16.5	17.7	19.1	23.6

Total Network Performance

Delay / Veh (s)	56.9

Intersection: 3: OR 42

Movement	NE
Directions Served	R
Maximum Queue (ft)	26
Average Queue (ft)	1
95th Queue (ft)	14
Link Distance (ft)	712
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: OR 42 & Lookingglass Rd

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	40	194	50
Average Queue (ft)	6	70	20
95th Queue (ft)	27	161	56
Link Distance (ft)		1422	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	200		25
Storage Blk Time (%)		45	3
Queuing Penalty (veh)		7	4

Intersection: 16: OR 42 & Heatherwood Ln

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 19: OR 42 & Melody Ln/Jackie Ave

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Umpqua Safari & OR 42

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	24	39
Average Queue (ft)	2	8
95th Queue (ft)	15	32
Link Distance (ft)		448
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	50	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 30: Pepsi Rd & OR 42

Movement	EB	EB	WB	NB	NB
Directions Served	T	R	L	L	R
Maximum Queue (ft)	5	6	70	64	63
Average Queue (ft)	0	0	22	14	30
95th Queue (ft)	4	0	50	46	60
Link Distance (ft)	744			848	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		125	100		25
Storage Blk Time (%)			0	6	7
Queuing Penalty (veh)			0	2	1

Intersection: 31:

Movement	WB	SW
Directions Served	T	R
Maximum Queue (ft)	256	219
Average Queue (ft)	52	44
95th Queue (ft)	172	139
Link Distance (ft)	1037	852
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 40: OR 42 & Helweg Rd

Movement	SB
Directions Served	LR
Maximum Queue (ft)	36
Average Queue (ft)	4
95th Queue (ft)	22
Link Distance (ft)	557
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 50: Andorra Dr/Rolling Hills Rd & OR 42

Movement	EB	WB	NB	SB
Directions Served	L	L	LR	LR
Maximum Queue (ft)	34	46	99	84
Average Queue (ft)	8	10	38	28
95th Queue (ft)	28	34	77	65
Link Distance (ft)			375	415
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	350	200		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 60: OR 42 & Landers Ave

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	36	116	46
Average Queue (ft)	3	41	4
95th Queue (ft)	19	88	23
Link Distance (ft)		588	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	400		50
Storage Blk Time (%)		13	0
Queuing Penalty (veh)		1	0

Intersection: 70: Emils Way & OR 42

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	L	LR	LR
Maximum Queue (ft)	24	19	115	178	57
Average Queue (ft)	2	1	40	61	13
95th Queue (ft)	11	8	87	133	43
Link Distance (ft)		552		247	277
Upstream Blk Time (%)				0	
Queuing Penalty (veh)				0	
Storage Bay Dist (ft)	175		250		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 80: Carnes Rd & OR 42

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	420	405	340	141	303	314	192	118	175	209	221
Average Queue (ft)	266	201	137	52	163	186	82	42	66	104	100
95th Queue (ft)	486	416	256	110	273	292	153	88	130	184	184
Link Distance (ft)		877	877		520	520	520		602		457
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	375			225				175		250	
Storage Blk Time (%)	14	0			2				0	0	0
Queuing Penalty (veh)	52	0			2				0	0	0

Intersection: 90: Art Mill Ln & OR 42

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 100: Winery Ln & OR 42

Movement	EB	EB	WB	NB
Directions Served	T	TR	L	LR
Maximum Queue (ft)	336	232	35	35
Average Queue (ft)	46	23	3	6
95th Queue (ft)	256	161	18	28
Link Distance (ft)	1254	1254		274
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			150	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 110: Grant Smith Rd/OR 99 & OR 42

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	R	L	T
Maximum Queue (ft)	443	699	673	104	239	259	157	90	48	98	201	19
Average Queue (ft)	162	379	138	36	131	153	66	35	10	6	96	3
95th Queue (ft)	367	720	461	81	212	229	118	75	34	43	174	12
Link Distance (ft)		694	694		712	712			968			890
Upstream Blk Time (%)		5	0									
Queuing Penalty (veh)		26	2									
Storage Bay Dist (ft)	300			400			175	200		200	150	
Storage Blk Time (%)	0	16				4	0				2	
Queuing Penalty (veh)	0	28				9	1				6	

Network Summary

Network wide Queuing Penalty: 141

Appendix C. ODOT Crash Data Reports
(January 1, 2005 through December 31, 2009)

CRASH LOCATION LIST

Highway 035 ALL ROAD TYPES, MP 73.85 to 77.17 01/01/2005 to 12/31/2010, Both Add and Non-Add mileage

Total crash records: 166

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	RDWY #	COMNT	MLGTYP	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	SURF	TOTVEH	VEHICLE TYP/OWN #1	#2	PEOPLE KILL	INJ	ALCOH	SPED
00671	06/19/2005	3P	SU	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 73.88	TURN		02		DRY	2	011	011	0	0	N	N
01265	10/18/2005	3P	TU	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 73.88	TURN	082	02		DRY	2	011	011	0	2	N	N
01241	09/25/2006	8A	MO	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 73.88	TURN		02		DRY	2	011	011	0	0	N	N
01600	12/22/2006	2P	FR	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 73.88	TURN		02		DRY	2	011	011	0	2	N	N
00060	01/05/2007	7A	FR	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 73.88	FIX	079	01	081	ICE	2	011	011	0	0	N	Y
00054	01/05/2007	7A	FR	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 73.88	FIX	079,124	01	081	ICE	1	011		0	0	N	Y
00129	02/08/2009	5P	SU	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 73.88	TURN		02	028	WET	2	011	011	0	0	N	N
01229	12/15/2010	4P	WE	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 73.88	TURN		02		DRY	2	011	011	0	1	N	N
00888	09/28/2009	1P	MO	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.00	REAR	010	07	043	DRY	2	091	011	0	1	N	N
01437	12/07/2007	5P	FR	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.19	REAR		01	047,026	WET	2	011	011	0	1	N	Y
01090	10/22/2009	11A	TH	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.19	TURN		02	028	DRY	2	011	011	0	0	N	N
01041	10/29/2009	10A	TH	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.19	TURN		02		WET	2	011	011	0	0	N	N
00597	05/09/2005	6A	MO	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.30	SS-M	076	05	039	WET	2	011	041	0	1	N	N
00759	07/02/2007	4P	MO	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.32	FIX	058,005,069	32	080,052	DRY	2	011	011	0	1	N	N
00050	01/30/2010	10A	SA	Winston	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.38	REAR		07	026	WET	2	011	011	0	2	N	N
00170	01/05/2006	4P	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.61	TURN		02		DRY	2	011	011	0	0	N	N
00056	01/05/2007	8A	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.72	SS-O	124	13	045	ICE	2	011	011	0	0	N	N
00602	05/10/2005	4P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	TURN		02		WET	2	011	011	0	1	N	N
01386	11/05/2005	4P	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	TURN		02		DRY	2	011	011	0	0	N	N
00388	03/07/2006	7A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	TURN		02		WET	2	011	051	0	0	N	N
00474	04/21/2006	4P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	TURN		02		DRY	2	011	011	0	1	N	N
00584	05/12/2006	5P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	TURN		02	028	DRY	2	011	011	0	1	N	N
00870	09/16/2008	6P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	TURN		08	002	DRY	2	011	011	0	0	N	N
00287	04/06/2009	4P	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	TURN	010	02	028	DRY	2	011	011	0	0	N	N
00674	07/20/2009	12P	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	TURN	013	02		DRY	3	011	011	0	3	N	N
00711	08/02/2009	4P	SU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	TURN		02	028	DRY	2	011	011	0	0	N	N
00856	09/09/2010	3P	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	TURN		02		DRY	2	011	011	0	1	N	N
01222	12/13/2010	10A	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	TURN		02	028	WET	2	011	011	0	2	N	N

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CRASH LOCATION LIST

Highway 035 ALL ROAD TYPES, MP 73.85 to 77.17 01/01/2005 to 12/31/2010, Both Add and Non-Add mileage

Total crash records: 166

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	RDWY #	COMPNT	MLGTYP	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	SURF	TOTVEH	VEHICLE TYP/OWN #1	#2	PEOPLE KILL	INJ	ALCOH	SPED
01239	12/17/2010	10A	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	ANGL		02	028	DRY	2	011	011	0	1	N	N
01260	12/21/2010	5P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.77	TURN		02	004	DRY	2	011	011	0	0	N	N
00896	09/01/2009	10A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.87	REAR		32	026,052	DRY	2	041	011	0	2	N	N
00661	07/19/2010	3P	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 74.93	SS-O		13	045	DRY	2	011	011	0	1	N	N
01029	10/03/2008	2P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.00	SS-O		13	045	WET	2	011	011	0	0	N	N
01018	10/03/2009	5P	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.00	HEAD		01	047,080	WET	2	011	011	0	3	N	Y
00776	08/03/2010	9A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.07	TURN		02		DRY	2	011	011	0	0	N	N
01251	12/17/2009	12P	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.10	REAR		01	042	WET	2	011	011	0	1	N	Y
00357	03/22/2005	7A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.22	ANGL	013	04		WET	5	011	011	0	1	N	N
00215	02/15/2006	5A	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.22	TURN		08	004	DRY	2	011	011	0	1	N	N
00367	03/25/2005	2P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.42	TURN		02		DRY	2	011	011	0	4	N	N
00959	08/22/2005	8A	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.42	TURN		02		DRY	2	011	041	0	0	N	N
00287	02/24/2006	7P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.42	TURN	082,010,093	02	028	DRY	2	011	011	0	1	N	N
01476	11/22/2006	5P	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.42	TURN		02		WET	2	011	011	0	3	N	N
00427	05/10/2008	6P	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.42	FIX	052,097	10	081	DRY	1	011		0	0	N	N
00395	05/15/2009	9A	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.42	TURN		02	028	DRY	2	011	011	0	1	N	N
00819	08/31/2010	4P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.42	REAR		07	042	DRY	2	091	011	0	1	N	N
00381	04/06/2005	1P	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.53	TURN		02	028	DRY	2	011	011	0	3	N	N
00383	04/06/2005	2P	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.53	REAR		07,27,08	043	DRY	2	011	011	0	1	N	N
00177	01/16/2006	10A	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.53	TURN		02	004	DRY	2	011	011	0	3	N	N
00767	06/21/2006	6A	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.53	TURN		08		DRY	2	011	011	0	1	N	N
00498	05/01/2007	4P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.53	TURN		02	028	DRY	2	011	041	0	0	N	N
01409	12/21/2007	5P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.53	TURN		08	001	WET	2	011	011	0	0	N	N
00321	04/01/2008	11A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.53	TURN		08		DRY	2	011	011	0	0	N	N
00510	06/14/2008	7P	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.53	TURN		02		DRY	2	011	011	0	3	N	N
00990	10/15/2009	7A	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.53	TURN	053	08		WET	2	011	011	0	1	N	N
01009	09/24/2010	7P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.53	TURN	001	32,02		DRY	2	091	011	1	0	N	N
00088	01/08/2008	10P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.62	PED		18,19		WET	1	011		0	1	Y	N

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Highway 035 ALL ROAD TYPES, MP 73.85 to 77.17 01/01/2005 to 12/31/2010, Both Add and Non-Add mileage

Total crash records: 166

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00152	02/06/2009	7P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.64	SS-O	092	13,26	045	DRY	2	011	011	0	1	N	N
00373	04/27/2010	1P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.66	TURN		06	019	WET	2	011	011	0	0	N	N
01175	10/04/2007	4P	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.67	REAR		01,07	047,043	WET	2	011	011	0	1	N	Y
01456	12/12/2007	4P	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.70	REAR		07	026	WET	2	011	011	0	1	N	N
00482	04/20/2005	1P	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.71	REAR		07	026	DRY	2	011	011	0	1	N	N
01170	10/02/2007	11A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.71	REAR		07	043	DRY	2	011	011	0	0	N	N
01523	12/31/2007	5P	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.71	REAR		01,07,22	047,043	WET	2	011	011	0	1	N	Y
00203	02/28/2008	5P	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.71	SS-O		13	045	DRY	2	011	011	0	2	N	N
00220	02/14/2005	10A	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	REAR		07	026	DRY	2	011	011	0	0	N	N
00286	03/07/2005	3P	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	REAR	004	07	026	DRY	2	011	011	0	0	N	N
01174	09/30/2005	10P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN		04		WET	2	041	011	0	0	N	N
01302	10/26/2005	8A	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN		02		DRY	2	011	011	0	0	N	N
00226	02/01/2006	7A	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN		08		WET	2	011	011	0	0	N	N
00748	06/12/2006	4P	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	REAR		07	043	WET	2	011	011	0	2	N	N
01604	12/23/2006	5P	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	REAR	013	07	043	WET	3	011	011	0	4	N	N
00226	02/25/2007	10A	SU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN		04,16	020	WET	2	011	011	0	1	N	N
00486	05/07/2007	5P	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	REAR		07	043	DRY	2	011	011	0	3	N	N
00736	06/25/2007	10P	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN		04,08	020,004	DRY	2	011	011	0	1	N	N
00883	08/03/2007	6P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	REAR		01	043,047	DRY	2	011	011	0	0	N	Y
00968	08/17/2007	4P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	REAR		07	014,026	DRY	2	011	011	0	0	N	N
01302	11/18/2007	12P	SU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	REAR		07	026	WET	2	011	011	0	0	N	N
00121	01/30/2008	4P	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	REAR		07	014,026	WET	2	011	011	0	0	N	N
00309	03/18/2008	5A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN		02		WET	2	011	011	0	0	N	N
00555	06/18/2008	11A	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN		02		DRY	2	011	011	0	0	N	N
01174	12/04/2008	7A	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	REAR		07	043	DRY	2	011	011	0	0	N	N
00106	02/03/2009	7A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN		02	004,028	DRY	2	011	011	0	0	N	N
00325	04/24/2009	4P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	REAR		07	014,026	DRY	2	011	011	0	1	N	N
00554	06/30/2009	7A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	REAR		16,32	026,052	DRY	2	011	011	0	2	N	N

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Highway 035 ALL ROAD TYPES, MP 73.85 to 77.17 01/01/2005 to 12/31/2010, Both Add and Non-Add mileage

Total crash records: 166

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	RDWY #	COMNT	MLGTYP	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	SURF	TOTVEH	VEHICLE TYP/OWN #1	#2	PEOPLE KILL	INJ	ALCOH	SPED
01150	11/14/2009	6P	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN		08,02		DRY	2	011	011	0	3	N	N
00049	01/29/2010	6P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN		02	004	WET	2	011	011	0	0	N	N
00129	02/11/2010	5P	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN		26	081	WET	2	011	011	0	0	N	N
00383	04/27/2010	10A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN	013	04	020	WET	3	011	011	1	2	N	N
01274	12/25/2010	4P	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.72	TURN		04	020	WET	2	011	011	0	0	N	N
00513	06/23/2009	6A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.73	REAR		01	026,047	DRY	2	011	041	0	1	N	Y
00152	02/16/2010	4P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.73	REAR	001	07	043	DRY	2	091	011	0	1	N	N
00331	03/30/2007	2P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.74	REAR	013	07,27	043	DRY	3	011	011	0	1	N	N
01253	12/19/2008	1P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.74	REAR		07	014	WET	2	011	011	0	0	N	N
01093	11/07/2010	1A	SU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.74	REAR		07	026	WET	2	011	011	0	4	Y	N
00155	02/18/2010	7A	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.76	REAR	013	32,07	052,043	DRY	3	011	011	0	0	N	N
01116	11/17/2009	2P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.78	SS-O		13		DRY	2	011	011	0	0	N	N
01102	09/13/2006	2P	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.92	REAR		07	042	DRY	2	011	041	0	1	N	N
00946	09/24/2010	7A	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 75.97	REAR		07	043	DRY	2	011	011	0	0	N	N
00503	05/12/2005	2P	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.00	REAR	013	07,01	043,042	DRY	3	011	011	0	1	N	Y
00288	03/07/2007	9A	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.00	REAR		07	043	DRY	2	011	011	0	0	N	N
00976	10/11/2009	9A	SU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.00	SS-M		05	039,080	DRY	3	011	011	0	3	N	N
01082	10/22/2009	3P	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.00	REAR		07,13	045,043	DRY	3	011	011	0	2	N	N
00901	09/17/2010	3P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.00	REAR	124	01	026	UNK	2	011	011	0	1	N	Y
01153	11/23/2010	6A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.03	HEAD	124	05,01	080,047	ICE	3	011	011	0	2	N	Y
00314	02/17/2006	7A	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.07	TURN		08		DRY	2	011	011	0	0	N	N
00339	03/12/2007	7A	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.07	TURN	082	08		DRY	2	011	011	0	2	N	N
00426	04/14/2005	10A	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.09	SS-O		13	045	DRY	2	011	011	0	0	N	N
01011	11/02/2008	6P	SU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.10	PED		18,19		DRY	1	011		1	0	Y	N
01160	12/07/2008	2P	SU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.10	REAR		07	026	WET	2	011	011	0	0	N	N
00200	02/13/2007	2P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.12	REAR	092	26		DRY	2	011	011	0	1	N	N
00913	07/30/2005	4P	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.16	REAR		07	026	DRY	2	011	011	0	1	N	N
00339	03/24/2006	4P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.17	REAR		27	052	DRY	2	011	011	0	1	N	N

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01248	10/26/2006	10A	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.18	REAR		01	026	DRY	2	011	011	0	1	N	Y
00087	01/03/2005	7A	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.20	REAR	013	10	026	DRY	3	011	011	0	0	N	N
01130	09/20/2005	7A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.20	REAR		07	042	DRY	2	011	011	0	0	N	N
00642	06/09/2005	10A	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.21	REAR		07	043	DRY	2	011	011	0	0	N	N
01091	09/06/2005	8A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.21	REAR		07	014	DRY	2	011	011	0	0	N	N
00331	03/29/2005	7A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		07	026	WET	2	011	011	0	0	N	N
00160	01/02/2006	4P	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		01	026	WET	2	011	011	0	3	N	Y
00082	01/10/2006	7A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	TURN		08		WET	2	011	011	0	1	N	N
00186	01/18/2006	2P	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	TURN		04	020,004	WET	2	011	011	0	3	N	N
01210	09/19/2006	5P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		10	026	WET	2	011	011	0	0	N	N
00044	01/04/2007	2P	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		07	042	WET	2	011	011	0	0	N	N
00650	06/12/2007	1P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	ANGL	013	04	020	DRY	3	051	011	0	1	N	N
00722	06/24/2007	4P	SU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	TURN		02,08	004,028	DRY	2	011	011	0	2	N	N
00090	01/10/2008	12P	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	SS-O		10	082,085	DRY	2	041	011	0	0	N	N
00560	06/19/2008	10A	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	TURN		08	007	DRY	2	011	011	0	0	N	N
00789	08/06/2008	10P	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	TURN		02		DRY	2	011	011	0	0	N	N
00046	01/20/2009	4P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	TURN		04	020	DRY	2	011	011	0	0	N	N
00221	03/29/2009	2P	SU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	TURN		02		DRY	2	011	011	0	0	N	N
00346	04/28/2009	11A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	HEAD	013	10	039,080	DRY	3	011	011	0	1	N	N
00535	06/10/2009	7A	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR	013,124,002	07	043	WET	3	011	011	0	2	N	N
00603	07/11/2009	9P	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	TURN		02		DRY	2	011	011	0	2	N	N
00927	09/17/2009	2P	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		07	026,014	DRY	2	013	011	0	1	N	N
01137	11/13/2009	5P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		07	043	DRY	2	011	011	0	0	N	N
01247	12/16/2009	7P	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		07	026	WET	2	011	011	0	1	N	N
01285	12/23/2009	6P	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		07	026	DRY	2	011	011	0	1	N	N
00085	01/08/2010	10A	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		10	026	DRY	2	011	011	0	0	N	N
00375	04/27/2010	5P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		07	014	WET	2	041	011	0	2	N	N
00404	05/04/2010	4P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		07,22	026	DRY	2	011	011	0	1	N	N

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00427	05/15/2010	10P	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		32	052,026	DRY	2	011	011	0	3	N	N
00794	08/24/2010	9A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR	013	27	026	DRY	3	011	011	0	1	N	N
01005	10/16/2010	3P	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.22	REAR		07	014	DRY	2	011	011	0	0	N	N
00061	01/10/2006	10A	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.23	REAR	013	07	043	WET	3	011	011	0	3	N	N
01017	10/12/2008	5P	SU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.23	REAR		07	043	DRY	2	011	011	0	1	N	N
00519	06/27/2008	3P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.24	REAR		07	026	DRY	2	011	011	0	0	N	N
00962	08/16/2007	9A	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.26	REAR	013	07	043	DRY	3	011	011	0	3	N	N
00419	04/03/2006	8A	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.30	REAR	013	07	043	WET	3	011	011	0	2	N	N
00712	06/28/2005	9P	TU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.31	REAR	079	01	047	DRY	2	011	011	0	0	N	Y
00958	08/22/2005	3P	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.32	REAR		07	043	DRY	2	011	011	0	1	N	N
00974	09/17/2010	12P	FR	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.40	SS-M	079	32,01	052,047,080	DRY	2	011	011	1	3	N	Y
00805	08/25/2010	10A	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.44	REAR		07	043	DRY	2	011	011	0	2	N	N
00599	05/20/2006	8A	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.45	SS-M		01,05,27	047,080,016	DRY	2	011	011	0	0	N	Y
00607	07/11/2010	11A	SU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.47	REAR	092	26	045	DRY	2	011	011	0	2	N	N
00581	05/11/2006	2P	TH	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.48	TURN		02	028	DRY	2	011	011	0	0	N	N
00326	04/24/2006	7P	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.54	HEAD	043	31,05	053,039	DRY	2	011	011	1	1	Y	Y
01293	10/26/2005	8A	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.55	REAR		07	043	WET	2	011	011	0	0	N	N
00114	01/23/2006	8A	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.65	REAR		10	026	DRY	2	011	011	0	0	N	N
00846	08/25/2010	8A	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.74	HEAD		01,05,16	047,039,080	DRY	2	011	011	1	1	N	Y
01413	12/22/2007	12A	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.95	FIX	079,088,010	01	047,081,083	WET	1	011		0	3	N	Y
00139	02/16/2009	2P	MO	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 76.95	FIX	058,079	27	083,081	DRY	1	011		0	0	N	N
01521	12/30/2007	10P	SU	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 77.04	FIX	088,062,124	10	081	ICE	1	011		0	0	N	N
00291	03/22/2008	1P	SA	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 77.05	FIX	079,010	10	081	DRY	1	011		0	1	N	N
01206	11/04/2009	2P	WE	*Douglas	1	MN	R	Coos Bay-Roseburg Highway AT MP 77.12	OTH	028,081	10	017,085	DRY	2	011	011	0	1	N	N
01133	11/15/2010	5P	MO	*Douglas	1	CN	R	Coos Bay-Roseburg Highway AT MP 75.96	REAR	124	07	026	WET	2	011	011	0	0	N	N
01038	11/03/2008	10A	MO	*Douglas	1	CN	R	Coos Bay-Roseburg Highway AT MP 76.23	REAR		07	014,043	WET	2	011	011	0	1	N	N

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OR 42 Expressway Management Plan:
Lookingglass Road to I-5 Exit 119

Technical Memorandum #4
Future Baseline Conditions Analysis

Prepared for

Oregon Department of Transportation, Region 3
3500 NW Stewart Parkway
Roseburg, Oregon 97470

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon

August 2013

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4. FUTURE BASELINE CONDITIONS ANALYSIS

This technical memorandum provides a summary of the 2035 Future Baseline (no-build) transportation conditions through the OR 42 corridor. The analysis examines conditions where the transportation system has been improved by projects with programmed funding sources and population and employment surrounding the corridor where traffic volumes continue to grow. The long-range regional growth forecasts are consistent with current land use zoning. The analysis identifies anticipated operational deficiencies and serves as the basis for later evaluation to compare project alternatives that address deficiencies.

4.1. Future Traffic Volume Development

Future Baseline traffic volume forecasts were developed using the Roseburg travel demand forecasting model, which is based on long-range land use assumptions. The travel demand forecasting process and resulting traffic forecasts are briefly described below.

4.1.1. Travel Demand Forecasting Model

Future Baseline traffic volumes were developed using a travel demand forecasting model for the Roseburg area maintained by the Transportation Planning and Analysis Unit (TPAU) at ODOT. The model relies on socioeconomic data (e.g., households and employment) to determine travel demand and system attributes (e.g., roadway capacity, speeds, and distances) to represent the transportation supply. The long-range regional growth forecasts are consistent with current land use zoning.

A revised land use forecast model was recently developed based on the recent changes to the City of Roseburg growth forecasts. To address the proposed growth forecast changes, an annual growth rate of 1.2 percent within the City of Roseburg and 1.0 percent outside the City (compared to the previous 2.0 and 2.5 percent growth rates) has been incorporated into the land use forecast model. This revised model was used to develop 2035 forecasts for this EMP.

TPAU used the transportation network from the model base year of 2000 and the future year of 2025, and incorporated base year (2009) and forecast year (2035) land use levels (housing and employment) for the model. These data were derived from existing available census and employment data, aerial surveys of development, assessments of vacant and buildable lands, and discussions with the City of Roseburg and Douglas County planning staff.

4.1.2. Future Transportation Network

The network used in the forecasts for the OR 42 expressway is a future network that includes two improvement projects currently identified in the 2012-2015 Statewide Transportation Improvement Program (STIP), as Amended:

1. OR 42: Grant Smith Road to I-5 northbound on-ramp – Extend the outside lane across I-5; Adjust the entrance to the southbound ramp *(STIP Key 17918)*

2. OR 99: I-5 Exit 120 to Happy Valley Road – Add signalization, add dual left-turn lanes, widen OR 99 *(STIP Key 17121)*

4.1.3. Traffic Forecasts

Traffic forecasts for the study area intersections were developed from the 2009 and 2035 forecasting models and the 2011 existing traffic data for the future baseline scenario. The process followed the procedures from ODOT's Analysis Procedures Manual (APM)[1]. The forecast year for this corridor study is 2035; thus, model volumes were extrapolated to 2035.

Traffic volumes for the future baseline scenario are presented in Figure 4-1. The detailed volume development worksheets are presented in Appendix A.

4.2. Future Traffic Operations

Traffic operations were evaluated at the 11 corridor intersections. All existing traffic signal timing and phasing was assumed to be optimized and coordinated (where applicable). Table 4-1 summarizes the results of the traffic operations analysis and compares findings to the Oregon Highway Plan (OHP) performance standards. Figure 4-2 presents the v/c ratios and LOS performance standards by lane group for the corridor intersections. Operations are described below and the detailed analysis worksheets are presented in Appendix B.

Vehicular traffic operations would meet OHP performance standards under future baseline, with three exceptions. The unsignalized intersection of OR 42 at Emils Way/Grange Road would exceed standards with a v/c ratio of 1.59 and LOS F on the southbound side street approach. The signalized intersection of OR 42 at Carnes Road/Roberts Creek Road would exceed standards with a v/c ratio of 0.95 and LOS D. The signalized intersection of OR 42 at OR 99/Grant Smith Road would exceed standards with an overall v/c of 0.98 and LOS D.

Although intersection operations would exceed OHP performance standards, the second through-lane on OR 42 in the eastbound direction, from OR 99/Grants Smith Road to the I-5 NB On Ramp, would improve v/c ratios and reduce queuing from OR 99/Grants Smith Road to Carnes Road/Roberts Creek Road. A more equal distribution of vehicles between the left and right through-lanes is expected.

[1] Analysis Procedures Manual, Oregon Department of Transportation, Transportation Development Division Planning Section, Transportation Planning and Analysis Unit, Salem, Oregon, April, 2006, Section 4.3.

Table 4-1. Future Baseline (2035) Design Hour Intersection Operations

Intersection	Critical[1] or Controlling Movement		2011 PM Peak Hour			Operational Standards[3]
	Approach	Movement	V/C Ratio[2]	LOS[2]	Delay[2] (sec.)	
1. OR 42 @ Lookingglass Rd	Local	SB L	0.62	E	> 200	0.80
	Expressway	WB T	0.33	-	-	
2. OR 42 @ Umpqua Safari RV Park	Local	NB L/R	0.03	C	13	0.80
	Expressway	EB T	0.43	-	-	
3. OR 42 @ Pepsi Rd	Local	NB L	0.10	C	39	0.80
	Expressway	WB T	0.39	-	-	
4. OR 42 @ Helweg Rd/Winston Section Rd	Local	SB L/R	0.03	C	51	0.80
	Expressway	WB T	0.53	-	-	
5. OR 42 @ Rolling Hills Rd/Andorra Dr	Local	SB L/T/R	0.38	E	46	0.80
	Expressway	WB T	0.51	-	-	
6. OR 42 @ Landers Ave	Local	SB L	0.51	E	>200	0.80
	Expressway	WB T	0.54	-	-	
7. OR 42 @ Emils Way/SW Grange Rd	Local	NB L/T/R	**1.59**	F	>200	0.80
	Expressway	WB T	0.57	-	-	
8. OR 42 @ Carnes Rd/Roberts Creek Rd (Signalized)	Overall		**0.95**	D	51	0.80
9. OR 42 @ Art Mill Ln	Local	NB L/R	0.01	A	12	0.80
	Expressway	EB T	0.56	-	-	
10. OR 42 @ Winery Ln	Local	WB L	0.01	B	24	0.80
	Expressway	EB T	0.55	-	-	
11. OR 42 @ OR 99/Grant Smith Rd (Signalized)	Overall		**0.98**	D	50	0.80

Acronyms: For intersection approaches NB = northbound, SB = southbound, EB = eastbound, and WB = westbound. At the intersection approach L = left-turn movement, T = through movement, and R right-turn movement. Some approaches have shared lanes where two or more travel movements may be permitted as indicated with a slash.

Notes:
1. The critical movement at a signalized intersection is the overall operation of the intersection. The controlling movement at an unsignalized intersection is the stopped (or yield) movement with the worst v/c ratio.
2. The v/c ratio and LOS are provided from Synchro HCM Intersection Analysis Reports, while delay values are from SimTraffic.
3. Mobility standards are drawn from Table 6 of the 1999 OHP. Study area intersections are non-MPO, outside of an STA, and have a non-freeway speed limit greater than 45 mph. Intersections 1-4 are within the UGB, while study area intersections 5-11 are outside the UGB.

SHADED – results indicate where operational standards are not met

Six intersections would experience queuing that either exceeds available storage or extends past the nearest public intersection. Table 4-2 summarizes the intersection movements where these queues are expected. Three of the locations with queuing issues are at signalized intersections, and the other three are at unsignalized intersections.

Table 4-2. Future Baseline (2035) 95th Percentile Queues Exceeding Available Storage

Intersection	Approach & Movement	95th Percentile Queue (ft.)	Available Storage (ft.)	Percent Time Blocked[1]
1. OR 42 @ Lookingglass Road	SB R	75	25[3]	4
3. OR 42 @ Pepsi Road	NB R	75	25[3]	25
5. OR 42 @ Rolling Hills Road / Andorra Drive (Signalized)	NB L/T/R	150	100[2]	-
7. OR 42 @ Emils Way	NB L/T/R	325	200[2]	-
8. OR 42 @ Carnes Road/Roberts Creek Road (Signalized)	EB L	425	375[3]	6
	WB L	475	225[3]	3
	SB L	300	250[3]	4
11. OR 42 @ OR 99/Grant Smith Road (Signalized)	EB L	525	300[3]	36
	WB R	525	175[3]	4
	SB L	300	150[3]	20

Acronyms: For intersection approaches NB = northbound, SB = southbound, EB = eastbound, and WB = westbound. At the intersection approach L = left-turn movement, T = through movement, and R right-turn movement. Some approaches have shared lanes where two or more travel movements may be permitted as indicated with a slash.

Notes:
1. Percent time block reflects the percentage of time when the queue either extends out of a storage bay and interferes with the adjacent through travel lane or extends past the next upstream intersection.
2. Storage distance reflects spacing to the next public access point.
3. Storage distance reflects length of travel lane or turn bay.

Significant queuing would occur at the signalized intersections of Carnes Road and OR 99/Grant Smith Road at OR 42. Both intersections would have queues that spill out of the available storage in turn lanes which would impact flow in the adjacent through travel lanes. These conditions would be present on multiple approaches at these intersections.

The nearness of Grange Road on the south side of OR 42 also creates some queuing concerns. The northbound approach of Rolling Hills Road at OR 42 would have queues that extend well past Grange Road as would the northbound approach on Grange Road opposite Emils Way.

4.3. Future Traffic Safety Considerations

The future baseline analysis reveals several long-term traffic safety issues that need consideration. In general, long delays and extensive queues may cause drivers to engage in riskier actions, such as running lights or traveling longer distances in the center refuge to go around queues, which could result in more turning, angle, and sideswipe collisions. On unsignalized side streets, longer delays may increase the likelihood that drivers would accept shorter gaps in the mainline traffic putting them at risk for turning or angle collisions. Where congestion is expected to worsen, it is safe to assume that current safety concerns would be exacerbated.

The existing conditions analysis identified frequency, severity, rate, and type of reported crashes along the study corridor and at each study intersection for a six-year analysis period (January 1, 2005, and December 31, 2010). The data is summarized in Table 3-8 of the Existing

Conditions Memo. There is one (1) segment identified in the top 10% of the most recent (2010) SPIS rankings within the corridor. This top 10% SPIS location is at Carnes Road/Roberts Creek Road. This analysis revealed multiple mainline segments/intersections with specific crash trends. The areas of concern are primarily focused at:

- Intersection of OR 42 and Carnes Road/Roberts Creek Road
- Intersection of OR 42 and OR 99/Grant Smith Road
- Segment from Rolling Hills Road/Andora Drive to Emils Way/Grange Road (including intersections)

Pedestrian collisions occurred at two locations during the six-year analysis period: one at Emils Way/Grange Road and one at Grant Smith Road. There were no bicycle-related collisions.

4.4. Conclusions

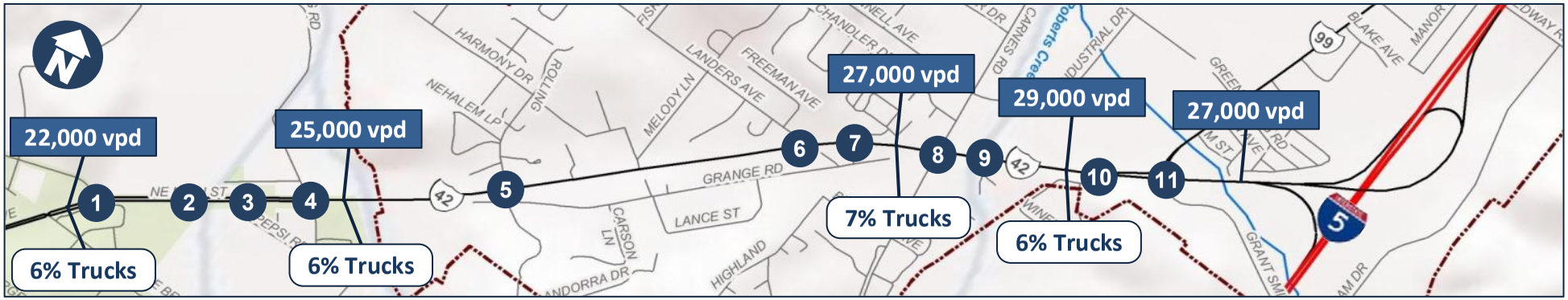
Vehicular traffic operations are expected to exceed OHP performance standards at three locations: OR 42 at Emils Way / SW Grange Road, OR 42 at Carnes Road/Roberts Creek Road (Signalized), and OR 42 at OR 99/Grant Smith Road (Signalized). Furthermore, five locations are expected to have vehicular queues either exceed available storage or extend past the nearest public intersection. Assumed improvements would provide some relief for the system, but further improvements are required to meet operational standards.

The Future Baseline scenario would not provide improvements to mitigate the frequency or severity of crashes at several problematic locations, and may generally result in an increased crash rate as drivers are provided smaller gaps due to increased traffic volumes.

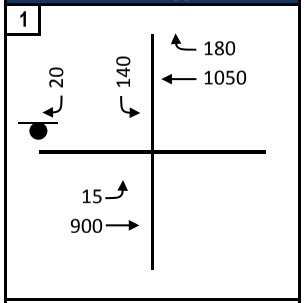
Attachments:

Figure 4-1.Future (2034) Baseline Scenario – Design Hour Traffic Volumes
Figure 4-2.Future (2034) Baseline Scenario – Lane Configurations & Traffic Operations

Appendix A. Future Baseline Traffic Volume Development Worksheets
Appendix B. Traffic Analysis Worksheets

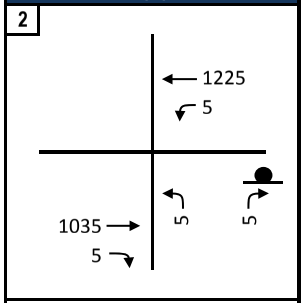


OR 42 @ Lookingglass Road (1)



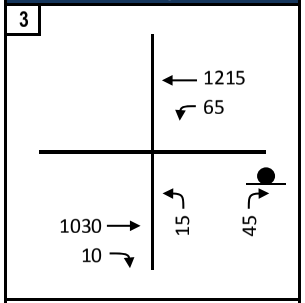
TEV = 2305

OR 42 @ Umpqua Safari RV (2)



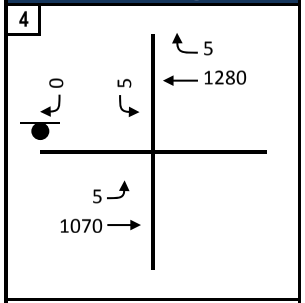
TEV = 2280

OR 42 @ Pepsi Road (3)



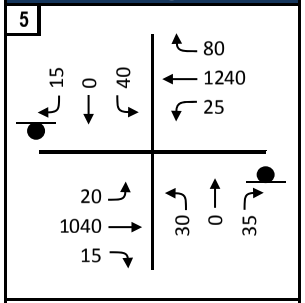
TEV = 2380

OR 42 @ Helweg Road (4)



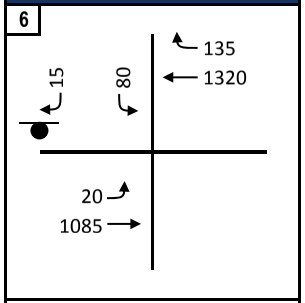
TEV = 2365

OR 42 @ Rolling Hills Road (5)



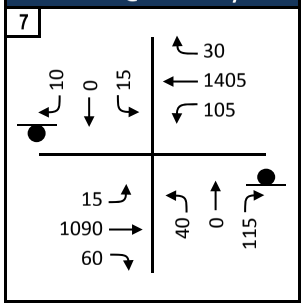
TEV = 2540

OR 42 @ Landers Avenue (6)



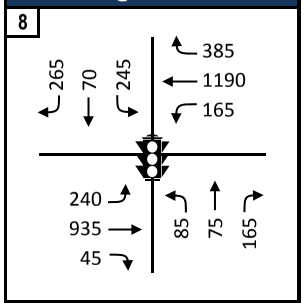
TEV = 2655

OR 42 @ Emils Way (7)



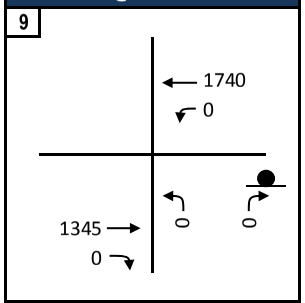
TEV = 2885

OR 42 @ Carnes Road (8)



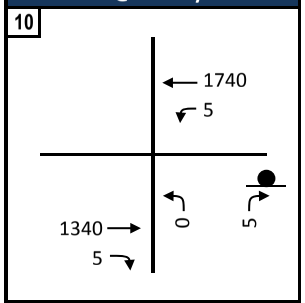
TEV = 3865

OR 42 @ Art Mill Lane (9)



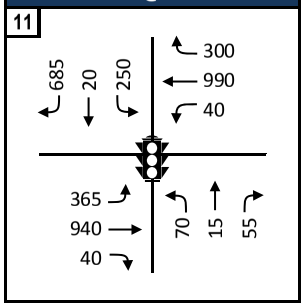
TEV = 3085

OR 42 @ Winery Lane (10)



TEV = 3095

OR 42 @ OR 99 (11)



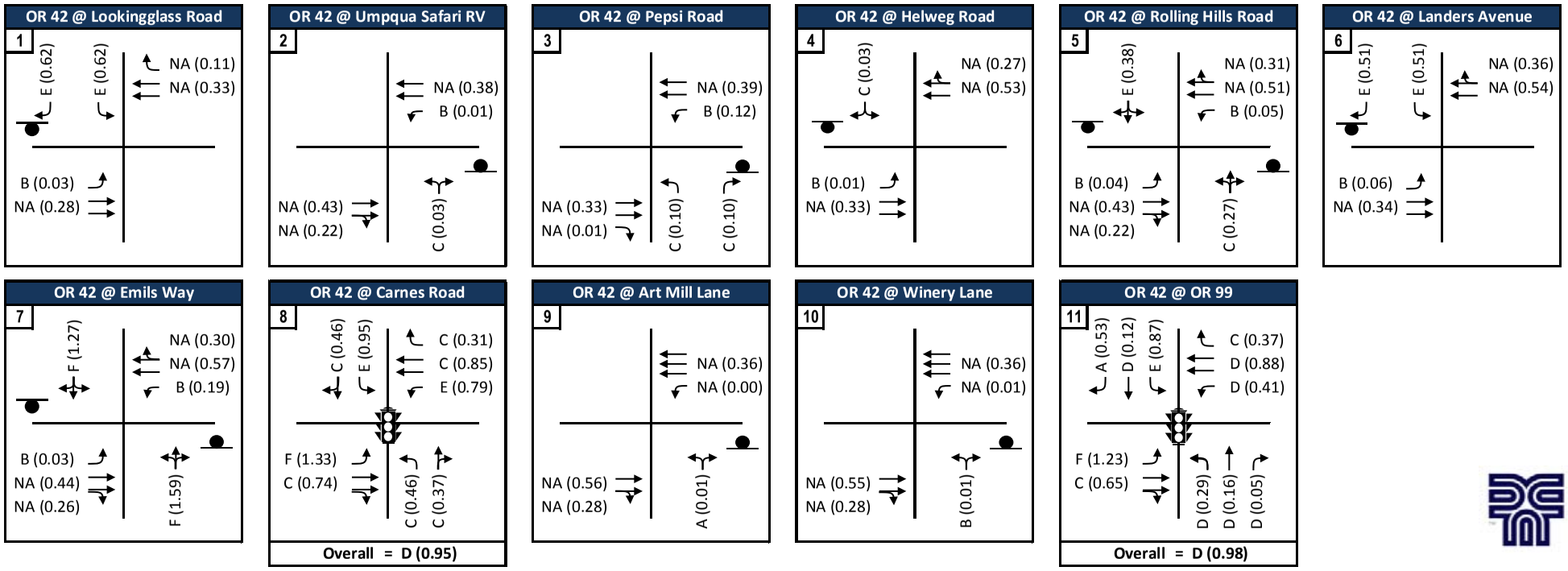
TEV = 3770

OR 42 Expressway Management Plan

Legend

- Turning Movement
- ### PM Peak Hour Volume
- TEV: Total Entering Volume
- Signalized Intersection
- STOP-Controlled
- # Intersection Number
- #,### vpd — 2011 Average Daily Traffic Volume (vehicles per day)
- #% Trucks — Truck Percentage of Total Trafffic (Single Unit and Semi-Trailer)

Figure 4-1
Future Baseline (2035)
Design Hour Traffic Volumes



OR 42 Expressway Management Plan

Legend

- Lane Group
- A — Level of Service (LOS)
- 0.00 — Volume-to-Capacity (V/C) Ratio
- NA — LOS not available for free flowing movements
- Signalized Intersection
- STOP-Contr
- # — Intersection Number

Figure 4-2

Future Baseline (2035) Lane Configurations & Traffic Operations

Appendix A. Future Baseline Traffic Volume Development Worksheets

Project: OR 42 Expressway Management Plan
Job #: ODOT0000-0743
Subject: *PM Turning Movement Volumes*
Created:
Rev. Date: 8/5/2013

N-S ID	Synchro ID	Intersection	Movement	Int ID	Existing Counts 1-Hr Volume PM Peak	Existing Heavy Vehicle Count	Existing Heavy Vehicle Percentage	Base Year Adjustment Factor	Seasonal Adjustment Factor	30th Highest Hour Adjusted 1-Hr Volume AM Peak	Volume Balancing Adjustments	2011 Balanced Volumes PM Peak	Request 19 OR 99 Imp'ts Rolling Hills Ext 1.2% Growth 2035	Request 19 OR 99 Imp'ts Rolling Hills Ext 1.2% Growth 2035	Request 23 OR 99 Imp'ts WITHOUT RH 1.2% Growth 2035	Request 23 OR 99 Imp'ts WITHOUT RH 1.2% Growth 2035	Request 23 BALANCED OR 99 Imp'ts WITHOUT RH 1.2% Growth 2035
1	10	OR 42 @ Lookingglass Road	EBL	10	11	1	9%	1.00	1.07	10	0	10	14	15	14	15	15
	10	16 hr PM Turning Movement Count	EBT	10	639	44	7%	1.00	1.07	685	0	685	937	935	918	920	900
	10	Count Date: 5/16/2011	EBR	10	0		0%	1.00	1.07	0	0	0	0	0	0	0	0
	10	2011	WBL	10	0		0%	1.00	1.07	0	0	0	0	0	0	0	0
	10	Signalized	WBT	10	744	37	5%	1.00	1.07	795	-55	740	1094	1095	1060	1060	1050
	10		WBR	10	129	2	2%	1.00	1.07	140	0	140	188	190	183	185	180
	10	PM Peak Hour: 3:30 PM-4:30 PM	NBL	10	0		0%	1.00	1.07	0	0	0	0	0	0	0	0
	10	PM Peak Hour Used: 3:45 PM-4:45 PM	NBT	10	0		0%	1.00	1.07	0	0	0	0	0	0	0	0
	10		NBR	10	0		0%	1.00	1.07	0	0	0	0	0	0	0	0
	10		SBL	10	111	4	4%	1.00	1.07	120	0	120	149	150	147	145	140
	10	PHF:	SBT	10	0		0%	1.00	1.07	0	0	0	0	0	0	0	0
	10	0.93	SBR	10	12	0	0%	1.00	1.07	15	0	15	20	20	21	20	20
			TEV		**1646**	**88**				**1765**	**-55**	**1710**		**2405**		**2345**	**2305**
2	20	OR 42 @ Umpqua Safari RV Park	EBL	20	0		0%	1.00	1.07	0	0	0	0	0	0	0	0
	20	4 hr PM Turning Movement Count	EBT	20	798	42	5%	1.00	1.07	855	-55	800	1081	1080	1059	1060	1035
	20	Count Date: 5/24/2011	EBR	20	5	0	0%	1.00	1.07	5	0	5	5	5	5	5	5
	20	2011	WBL	20	3	0	0%	1.00	1.07	5	0	5	5	5	5	5	5
	20		WBT	20	816	31	4%	1.00	1.07	875	0	875	1273	1275	1234	1235	1225
	20		WBR	20	0		0%	1.00	1.07	0	0	0	0	0	0	0	0
	20	PM Peak Hour: 3:15 PM-4:15 PM	NBL	20	4	0	0%	1.00	1.07	5	0	5	5	5	5	5	5
	20	PM Peak Hour Used: 3:45 PM-4:45 PM	NBT	20	0		0%	1.00	1.07	0	0	0	0	0	0	0	0
	20		NBR	20	4	0	0%	1.00	1.07	5	0	5	5	5	5	5	5
	20		SBL	20	0		0%	1.00	1.07	0	0	0	0	0	0	0	0
	20	PHF:	SBT	20	0		0%	1.00	1.07	0	0	0	0	0	0	0	0
	20	0.91	SBR	20	0		0%	1.00	1.07	0	0	0	0	0	0	0	0
			TEV		**1630**	**73**				**1750**	**-55**	**1695**		**2375**		**2315**	**2280**
3	30	OR 42 @ Pepsi Road	EBL	30	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	30	4 hr PM Turning Movement Count	EBT	30	726	26	6%	1.00	1.04	755	40	795	1074	1075	1050	1050	1030
	30	Count Date: 6/13/2011	EBR	30	9	0	0%	1.00	1.04	10	0	10	14	15	12	10	10
	30	2011	WBL	30	60	3	5%	1.00	1.04	60	0	60	70	70	69	70	65
	30		WBT	30	790	38	5%	1.00	1.04	820	45	865	1258	1260	1222	1220	1215
	30		WBR	30	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	30	PM Peak Hour: 4:30 PM-5:30 PM	NBL	30	14	0	0%	1.00	1.04	15	0	15	20	20	17	15	15
	30	PM Peak Hour Used: 3:45 PM-4:45 PM	NBT	30	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	30		NBR	30	40	0	0%	1.00	1.04	40	0	40	41	40	43	45	45
	30		SBL	30	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	30	PHF:	SBT	30	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	30	0.88	SBR	30	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
			TEV		**1639**	**67**				**1700**	**85**	**1785**		**2480**		**2410**	**2380**
4	40	OR 42 @ Helweg Road	EBL	40	2	0	0%	1.00	1.07	0	0	0	0	0	0	0	5
	40	4 hr PM Turning Movement Count	EBT	40	822	44	5%	1.00	1.07	880	-45	835	1114	1115	1093	1095	1070

Project: OR 42 Expressway Management Plan
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	40	Count Date: 5/24/2011	EBR	40	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	40	2011	WBL	40	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	40		WBT	40	866	37	4%	1.00	1.07	925	0	925	1295	1295	1288	1290	1280
	40		WBR	40	7	0	0%	1.00	1.07	5	0	5	6	5	5	5	5
	40	PM Peak Hour: 3:30 PM-4:30 PM	NBL	40	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	40	PM Peak Hour Used: 3:45 PM-4:45 PM	NBT	40	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	40		NBR	40	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	40		SBL	40	5	0	0%	1.00	1.07	5	0	5	6	5	5	5	5
	40	PHF:	SBT	40	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	40	0.92	SBR	40	1	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
			TEV		**1703**	**81**				**1815**	**-45**	**1770**		**2420**		**2395**	**2365**
5	50	OR 42 @ Rolling Hills Road	EBL	50	13	0	0%	1.00	1.07	15	0	15	161	160	8	10	20
	50	16 hr PM Turning Movement Count	EBT	50	758	45	6%	1.00	1.07	810	5	815	891	890	1059	1060	1040
	50	Count Date: 5/16/2011	EBR	50	11	2	18%	1.00	1.07	10	0	10	21	20	4	5	15
	50	2011	WBL	50	18	3	17%	1.00	1.07	20	0	20	17	15	26	25	25
	50		WBT	50	890	44	5%	1.00	1.07	950	-60	890	1223	1225	1273	1275	1240
	50		WBR	50	41	0	0%	1.00	1.07	45	0	45	194	195	86	85	80
	50	PM Peak Hour: 3:30 PM-4:30 PM	NBL	50	27	1	4%	1.00	1.07	30	0	30	52	50	15	15	30
	50	PM Peak Hour Used: 3:45 PM-4:45 PM	NBT	50	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	50		NBR	50	18	3	17%	1.00	1.07	20	0	20	11	10	33	35	35
	50		SBL	50	23	1	4%	1.00	1.07	25	0	25	46	45	41	40	40
	50	PHF:	SBT	50	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	50	0.94	SBR	50	11	0	0%	1.00	1.07	10	0	10	58	60	5	5	15
			TEV		**1810**	**99**				**1935**	**-55**	**1880**		**2670**		**2555**	**2540**
6	60	OR 42 @ Landers Avenue	EBL	60	4	0	0%	1.00	1.07	5	0	5	7	5	20	20	20
	60	4 hr PM Turning Movement Count	EBT	60	791	42	5%	1.00	1.07	845	10	855	988	990	1073	1075	1085
	60	Count Date: 5/24/2011	EBR	60	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	60	2011	WBL	60	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	60	Signalized	WBT	60	854	32	4%	1.00	1.07	915	35	950	1548	1550	1348	1350	1320
	60		WBR	60	65	1	2%	1.00	1.07	70	0	70	122	120	153	155	135
	60	PM Peak Hour: 3:15 PM-4:15 PM	NBL	60	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	60	PM Peak Hour Used: 3:45 PM-4:45 PM	NBT	60	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	60		NBR	60	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	60		SBL	60	49	0	0%	1.00	1.07	50	0	50	39	40	78	80	80
	60	PHF:	SBT	60	0	0	0%	1.00	1.07	0	0	0	0	0	0	0	0
	60	0.94	SBR	60	6	0	0%	1.00	1.07	5	0	5	5	5	16	15	15
			TEV		**1769**	**75**				**1890**	**45**	**1935**		**2710**		**2695**	**2655**
7	70	OR 42 @ Emils Way	EBL	70	4	0	0%	1.00	1.04	5	0	5	10	10	14	15	15
	70	4 hr PM Turning Movement Count	EBT	70	719	25	6%	1.00	1.04	750	105	855	899	900	1021	1020	1090
	70	Count Date: 6/13/2011	EBR	70	42	0	0%	1.00	1.04	45	0	45	65	65	64	65	60
	70	2011	WBL	70	96	2	2%	1.00	1.04	100	0	100	120	120	103	105	105

Project: OR 42 Expressway Management Plan
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Created:
Rev. Date: 8/5/2013

N-S ID	Synchro ID	Intersection	Movement	Int ID	Existing Counts 1-Hr Volume PM Peak	Existing Heavy Vehicle Count	Existing Heavy Vehicle Percentage	Base Year Adjustment Factor	Seasonal Adjustment Factor	30th Highest Hour Adjusted 1-Hr Volume AM Peak	Volume Balancing Adjustments	2011 Balanced Volumes PM Peak	Request 19 OR 99 Imp'ts Rolling Hills Ext 1.2% Growth 2035	Request 19 OR 99 Imp'ts Rolling Hills Ext 1.2% Growth 2035	Request 23 OR 99 Imp'ts WITHOUT RH 1.2% Growth 2035	Request 23 OR 99 Imp'ts WITHOUT RH 1.2% Growth 2035	Request 23 BALANCED OR 99 Imp'ts WITHOUT RH 1.2% Growth 2035
	70		WBT	70	953	42	4%	1.00	1.04	990	0	990	1499	1500	1313	1315	1405
	70		WBR	70	16	1	6%	1.00	1.04	15	0	15	25	25	32	30	30
	70	PM Peak Hour: 3:30 PM-4:30 PM	NBL	70	24	1	4%	1.00	1.04	25	0	25	48	50	40	40	40
	70	PM Peak Hour Used: 3:45 PM-4:45 PM	NBT	70	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	70		NBR	70	106	1	1%	1.00	1.04	110	0	110	123	125	115	115	115
	70		SBL	70	12	0	0%	1.00	1.04	10	0	10	6	5	15	15	15
	70	PHF:	SBT	70	1	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	70	0.97	SBR	70	7	1	14%	1.00	1.04	5	0	5	6	5	11	10	10
			TEV		**1980**	**73**				**2055**	**105**	**2160**		**2805**		**2730**	**2885**
8	80	OR 42 @ Carnes Road	EBL	80	200	3	2%	1.00	1.07	215	0	215	178	180	241	240	240
	80	16 hr PM Turning Movement Count	EBT	80	668	42	6%	1.00	1.07	715	10	725	876	875	933	935	935
	80	Count Date: 5/11/2010	EBR	80	35	1	3%	1.00	1.07	35	0	35	47	45	47	45	45
	80	2010	WBL	80	85	3	4%	1.00	1.07	90	0	90	158	160	163	165	165
	80		WBT	80	752	40	5%	1.00	1.07	805	0	805	1321	1320	1191	1190	1190
	80		WBR	80	238	6	3%	1.00	1.07	255	0	255	279	280	383	385	385
	80	PM Peak Hour: 3:45 PM-4:45 PM	NBL	80	56	2	4%	1.00	1.07	60	5	65	94	95	80	80	85
	80	PM Peak Hour Used: 3:45 PM-4:45 PM	NBT	80	56	0	0%	1.00	1.07	60	0	60	58	60	75	75	75
	80		NBR	80	108	6	6%	1.00	1.07	115	0	115	161	160	165	165	165
	80		SBL	80	190	6	3%	1.00	1.07	205	0	205	245	245	247	245	245
	80	PHF:	SBT	80	52	2	4%	1.00	1.07	55	0	55	72	70	70	70	70
	80	0.98	SBR	80	205	3	1%	1.00	1.07	220	15	235	289	290	243	245	265
			TEV		**2645**	**114**				**2830**	**30**	**2860**		**3780**		**3840**	**3865**
9	90	OR 42 @ Art Mill Lane	EBL	90	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	90	4 hr PM Turning Movement Count	EBT	90	878	39	4%	1.00	1.04	915	130	1045	1281	1280	1345	1345	1345
	90	Count Date: 6/13/2011	EBR	90	2	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	90	2011	WBL	90	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	90		WBT	90	1027	55	5%	1.00	1.04	1070	80	1150	1754	1755	1737	1735	1740
	90		WBR	90	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	90	PM Peak Hour: 4:30 PM-5:30 PM	NBL	90	1	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	90	PM Peak Hour Used: 3:45 PM-4:45 PM	NBT	90	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	90		NBR	90	1	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	90		SBL	90	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	90	PHF:	SBT	90	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	90	0.91	SBR	90	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
			TEV		**1909**	**94**				**1985**	**210**	**2195**		**3035**		**3080**	**3085**
10	100	OR 42 @ Winery Lane	EBL	100	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	100	4 hr PM Turning Movement Count	EBT	100	903	27	5%	1.00	1.04	940	100	1040	1276	1275	1340	1340	1340
	100	Count Date: 6/13/2011	EBR	100	3	0	0%	1.00	1.04	5	0	5	4	5	5	5	5
	100	2011	WBL	100	4	0	0%	1.00	1.04	5	0	5	6	5	5	5	5
	100	Signalized	WBT	100	998	47	6%	1.00	1.04	1040	110	1150	1754	1755	1737	1735	1740
	100		WBR	100	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0

Project: OR 42 Expressway Management Plan
Job #: ODOT0000-0743
Subject: ***PM Turning Movement Volumes***
Created:
Rev. Date: 8/5/2013

N-S ID	Synchro ID	Intersection	Movement	Int ID	Existing Counts 1-Hr Volume PM Peak	Existing Heavy Vehicle Count	Existing Heavy Vehicle Percentage	Base Year Adjustment Factor	Seasonal Adjustment Factor	30th Highest Hour Adjusted 1-Hr Volume AM Peak	Volume Balancing Adjustments	2011 Balanced Volumes PM Peak	Request 19 OR 99 Imp'ts Rolling Hills Ext 1.2% Growth 2035	Request 19 OR 99 Imp'ts Rolling Hills Ext 1.2% Growth 2035	Request 23 OR 99 Imp'ts WITHOUT RH 1.2% Growth 2035	Request 23 OR 99 Imp'ts WITHOUT RH 1.2% Growth 2035	Request 23 BALANCED OR 99 Imp'ts WITHOUT RH 1.2% Growth 2035
	100	PM Peak Hour: 4:30 PM-5:30 PM	NBL	100	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	100	PM Peak Hour Used: 3:45 PM-4:45 PM	NBT	100	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	100		NBR	100	6	0	0%	1.00	1.04	5	0	5	5	5	5	5	5
	100		SBL	100	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	100	PHF:	SBT	100	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
	100	0.93	SBR	100	0	0	0%	1.00	1.04	0	0	0	0	0	0	0	0
			TEV		**1914**	**74**				**1995**	**210**	**2205**		**3045**		**3090**	**3095**
11	110	OR 42 @ OR 99	EBL	110	166	25	15%	1.00	1.07	180	0	180	313	315	367	365	365
	110	16 hr PM Turning Movement Count	EBT	110	635	18	3%	1.00	1.07	680	155	835	954	955	938	940	940
	110	Count Date: 5/10/2010	EBR	110	29	6	21%	1.00	1.07	30	0	30	40	40	39	40	40
	110	2010	WBL	110	46	16	35%	1.00	1.07	50	0	50	39	40	39	40	40
	110		WBT	110	945	29	3%	1.00	1.07	1010	-160	850	1039	1040	990	990	990
	110		WBR	110	227	16	7%	1.00	1.07	245	0	245	251	250	300	300	300
	110	PM Peak Hour: 4:15 PM-5:15 PM	NBL	110	40	4	10%	1.00	1.07	45	0	45	72	70	69	70	70
	110	PM Peak Hour Used: 3:45 PM-4:45 PM	NBT	110	10	1	10%	1.00	1.07	10	0	10	13	15	16	15	15
	110		NBR	110	54	11	20%	1.00	1.07	60	0	60	53	55	53	55	55
	110		SBL	110	156	20	13%	1.00	1.07	165	0	165	226	225	251	250	250
	110	PHF:	SBT	110	10	0	0%	1.00	1.07	10	0	10	16	15	18	20	20
	110	0.94	SBR	110	244	18	7%	1.00	1.07	260	0	260	648	650	683	685	685
			TEV		**2562**	**164**				**2745**	**-5**	**2740**		**3670**		**3770**	**3770**

Appendix B. Traffic Analysis Worksheets

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	900	1050	180	140	20
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	947	1105	189	147	21
Pedestrians		1	1		1	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	0		0	
Right turn flare (veh)						1
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1296				1613	555
vC1, stage 1 conf vol					1106	
vC2, stage 2 conf vol					506	
vCu, unblocked vol	1296				1613	555
tC, single (s)	4.3				6.9	6.9
tC, 2 stage (s)					5.9	
tF (s)	2.3				3.5	3.3
p0 queue free %	97				41	96
cM capacity (veh/h)	494				249	475

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	16	474	474	553	553	189	168
Volume Left	16	0	0	0	0	0	147
Volume Right	0	0	0	0	0	189	21
cSH	494	1700	1700	1700	1700	1700	271
Volume to Capacity	0.03	0.28	0.28	0.33	0.33	0.11	0.62
Queue Length 95th (ft)	2	0	0	0	0	0	95
Control Delay (s)	12.5	0.0	0.0	0.0	0.0	0.0	37.9
Lane LOS	B						E
Approach Delay (s)	0.2			0.0			37.9
Approach LOS							E

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	1105	1335	0	0	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	5	1176	1420	0	0	5
Pedestrians		1	1		1	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1421				2021	712
vC1, stage 1 conf vol					1421	
vC2, stage 2 conf vol					599	
vCu, unblocked vol	1421				2021	712
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	99
cM capacity (veh/h)	475				175	374

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	5	588	588	947	473	5
Volume Left	5	0	0	0	0	0
Volume Right	0	0	0	0	0	5
cSH	475	1700	1700	1700	1700	374
Volume to Capacity	0.01	0.35	0.35	0.56	0.28	0.01
Queue Length 95th (ft)	1	0	0	0	0	1
Control Delay (s)	12.7	0.0	0.0	0.0	0.0	14.8
Lane LOS	B					B
Approach Delay (s)	0.1			0.0		14.8
Approach LOS						B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1035	5	5	1225	5	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1089	5	5	1289	5	5
Pedestrians	1			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	0	
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1096		1749	549
vC1, stage 1 conf vol					1093	
vC2, stage 2 conf vol					656	
vCu, unblocked vol			1096		1749	549
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	99
cM capacity (veh/h)			632		245	478

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	726	368	5	645	645	11
Volume Left	0	0	5	0	0	5
Volume Right	0	5	0	0	0	5
cSH	1700	1700	632	1700	1700	324
Volume to Capacity	0.43	0.22	0.01	0.38	0.38	0.03
Queue Length 95th (ft)	0	0	1	0	0	3
Control Delay (s)	0.0	0.0	10.7	0.0	0.0	16.5
Lane LOS			B			C
Approach Delay (s)	0.0		0.0			16.5
Approach LOS						C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1030	10	65	1215	15	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1120	11	71	1321	16	49
Pedestrians	1			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	0	
Right turn flare (veh)						1
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1131		1923	562
vC1, stage 1 conf vol					1121	
vC2, stage 2 conf vol					803	
vCu, unblocked vol			1131		1923	562
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			88		92	90
cM capacity (veh/h)			596		215	470

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	560	560	11	71	660	660	65
Volume Left	0	0	0	71	0	0	16
Volume Right	0	0	11	0	0	0	49
cSH	1700	1700	1700	596	1700	1700	626
Volume to Capacity	0.33	0.33	0.01	0.12	0.39	0.39	0.10
Queue Length 95th (ft)	0	0	0	10	0	0	9
Control Delay (s)	0.0	0.0	0.0	11.9	0.0	0.0	15.9
Lane LOS				B			C
Approach Delay (s)	0.0			0.6			15.9
Approach LOS							C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	1070	1280	5	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	1126	1347	5	5	0
Pedestrians		1	1		1	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	0		0	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1354				1926	678
vC1, stage 1 conf vol					1351	
vC2, stage 2 conf vol					575	
vCu, unblocked vol	1354				1926	678
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	100
cM capacity (veh/h)	504				190	394

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	5	563	563	898	454	5
Volume Left	5	0	0	0	0	5
Volume Right	0	0	0	0	5	0
cSH	504	1700	1700	1700	1700	190
Volume to Capacity	0.01	0.33	0.33	0.53	0.27	0.03
Queue Length 95th (ft)	1	0	0	0	0	2
Control Delay (s)	12.2	0.0	0.0	0.0	0.0	24.4
Lane LOS	B					C
Approach Delay (s)	0.1			0.0		24.4
Approach LOS						C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	1040	15	25	1240	80	30	0	35	40	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	21	1095	16	26	1305	84	32	0	37	42	0	16
Pedestrians		1			1			1			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1390			1112			1868	2589	557	2028	2555	697
vC1, stage 1 conf vol							1146	1146		1401	1401	
vC2, stage 2 conf vol							722	1443		627	1154	
vCu, unblocked vol	1390			1112			1868	2589	557	2028	2555	697
tC, single (s)	4.1			4.4			7.6	6.5	7.2	7.6	6.5	6.9
tC, 2 stage (s)							6.6	5.5		6.6	5.5	
tF (s)	2.2			2.4			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	96			95			81	100	92	67	100	96
cM capacity (veh/h)	488			543			168	136	436	126	145	383

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	21	730	381	26	870	519	68	58
Volume Left	21	0	0	26	0	0	32	42
Volume Right	0	0	16	0	0	84	37	16
cSH	488	1700	1700	543	1700	1700	252	154
Volume to Capacity	0.04	0.43	0.22	0.05	0.51	0.31	0.27	0.38
Queue Length 95th (ft)	3	0	0	4	0	0	27	40
Control Delay (s)	12.7	0.0	0.0	12.0	0.0	0.0	24.6	41.8
Lane LOS	B			B			C	E
Approach Delay (s)	0.2			0.2			24.6	41.8
Approach LOS							C	E

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	20	1085	1320	135	80	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	21	1142	1389	142	84	16
Pedestrians		1	1		1	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	0		0	
Right turn flare (veh)						2
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1533				2076	768
vC1, stage 1 conf vol					1462	
vC2, stage 2 conf vol					614	
vCu, unblocked vol	1533				2076	768
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	95				49	95
cM capacity (veh/h)	430				166	344

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	21	571	571	926	605	100
Volume Left	21	0	0	0	0	84
Volume Right	0	0	0	0	142	16
cSH	430	1700	1700	1700	1700	197
Volume to Capacity	0.05	0.34	0.34	0.54	0.36	0.51
Queue Length 95th (ft)	4	0	0	0	0	64
Control Delay (s)	13.8	0.0	0.0	0.0	0.0	42.2
Lane LOS	B					E
Approach Delay (s)	0.2			0.0		42.2
Approach LOS						E

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	1090	60	105	1405	30	40	0	115	15	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	15	1124	62	108	1448	31	41	0	119	15	0	10
Pedestrians		1			1			1			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					951							
pX, platoon unblocked	0.68						0.68	0.68		0.68	0.68	0.68
vC, conflicting volume	1480			1187			2139	2883	595	2394	2899	742
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	749			1187			1724	2827	595	2102	2850	0
tC, single (s)	4.1			4.1			7.6	6.5	6.9	7.5	6.5	7.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	97			81			0	100	73	0	100	99
cM capacity (veh/h)	577			584			31	9	447	12	9	705

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	15	749	436	108	966	514	160	26
Volume Left	15	0	0	108	0	0	41	15
Volume Right	0	0	62	0	0	31	119	10
cSH	577	1700	1700	584	1700	1700	101	20
Volume to Capacity	0.03	0.44	0.26	0.19	0.57	0.30	1.59	1.27
Queue Length 95th (ft)	2	0	0	17	0	0	307	87
Control Delay (s)	11.4	0.0	0.0	12.6	0.0	0.0	379.9	570.4
Lane LOS	B			B			F	F
Approach Delay (s)	0.1			0.9			379.9	570.4
Approach LOS							F	F

Intersection Summary			
Average Delay	25.9		
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	935	45	165	1190	385	85	75	165	245	70	265
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.0		4.5	4.0	4.0	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.90		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3116		1599	3167	1413	1598	1486		1613	1490	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.35	1.00		0.48	1.00	
Satd. Flow (perm)	1630	3116		1599	3167	1413	590	1486		815	1490	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	245	954	46	168	1214	393	87	77	168	250	71	270
RTOR Reduction (vph)	0	3	0	0	0	196	0	68	0	0	120	0
Lane Group Flow (vph)	245	997	0	168	1214	197	87	177	0	250	221	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Heavy Vehicles (%)	2%	6%	3%	4%	5%	3%	4%	2%	6%	3%	4%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases						6	8			4		
Actuated Green, G (s)	13.0	47.0		15.3	49.3	49.3	36.6	36.6		36.6	36.6	
Effective Green, g (s)	13.0	49.5		15.3	51.8	51.8	37.1	37.1		37.1	37.1	
Actuated g/C Ratio	0.11	0.43		0.13	0.45	0.45	0.32	0.32		0.32	0.32	
Clearance Time (s)	4.5	6.5		4.5	6.5	6.5	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	5.0		2.5	5.0	5.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	184	1342		212	1427	637	190	479		263	481	
v/s Ratio Prot	c0.15	0.32		0.11	c0.38			0.12			0.15	
v/s Ratio Perm						0.14	0.15			c0.31		
v/c Ratio	1.33	0.74		0.79	0.85	0.31	0.46	0.37		0.95	0.46	
Uniform Delay, d1	51.0	27.4		48.3	28.1	20.1	30.9	29.9		38.0	30.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	181.5	3.8		17.6	6.6	1.3	1.3	0.4		42.0	0.5	
Delay (s)	232.4	31.1		65.8	34.7	21.4	32.2	30.2		80.0	31.4	
Level of Service	F	C		E	C	C	C	C		E	C	
Approach Delay (s)		70.7			34.7			30.8			52.0	
Approach LOS		E			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	48.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	114.9	Sum of lost time (s)	13.0
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1345	0	0	1740	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1416	0	0	1832	0	0
Pedestrians	1			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	0	
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)	609					
pX, platoon unblocked			0.74		0.74	0.74
vC, conflicting volume			1417		2028	710
vC1, stage 1 conf vol					1417	
vC2, stage 2 conf vol					612	
vCu, unblocked vol			865		1690	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			573		241	803

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	944	472	0	611	611	611	0
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.56	0.28	0.00	0.36	0.36	0.36	0.01
Queue Length 95th (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS							A
Approach Delay (s)	0.0		0.0				0.0
Approach LOS							A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1340	5	5	1740	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1411	5	5	1832	0	5
Pedestrians	1			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	0	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)				747		
pX, platoon unblocked					0.77	
vC, conflicting volume			1417		2036	710
vC1, stage 1 conf vol					1414	
vC2, stage 2 conf vol					622	
vCu, unblocked vol			1417		1300	710
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	99
cM capacity (veh/h)			476		185	375

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	940	475	5	611	611	611	5
Volume Left	0	0	5	0	0	0	0
Volume Right	0	5	0	0	0	0	5
cSH	1700	1700	476	1700	1700	1700	375
Volume to Capacity	0.55	0.28	0.01	0.36	0.36	0.36	0.01
Queue Length 95th (ft)	0	0	1	0	0	0	1
Control Delay (s)	0.0	0.0	12.6	0.0	0.0	0.0	14.7
Lane LOS			B				B
Approach Delay (s)	0.0		0.0				14.7
Approach LOS							B

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	365	940	40	40	990	300	70	15	55	250	20	685
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1446	3183		1231	3228	1359	1511	1591	1240	1471	1716	1373
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1446	3183		1231	3228	1359	1511	1591	1240	1471	1716	1373
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	384	989	42	42	1042	316	74	16	58	263	21	721
RTOR Reduction (vph)	0	2	0	0	0	133	0	0	48	0	0	0
Lane Group Flow (vph)	384	1029	0	42	1042	183	74	16	10	263	21	721
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Heavy Vehicles (%)	15%	3%	21%	35%	3%	7%	10%	10%	20%	13%	2%	7%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	pt+ov	Prot	NA	Free
Protected Phases	5	2		1	6		3	8	8 1	7	4	
Permitted Phases						6						Free
Actuated Green, G (s)	23.8	53.8		8.0	39.0	39.0	18.8	6.9	19.9	23.2	11.3	112.9
Effective Green, g (s)	24.3	56.3		9.5	41.5	41.5	18.8	6.9	19.9	23.2	11.3	112.9
Actuated g/C Ratio	0.22	0.50		0.08	0.37	0.37	0.17	0.06	0.18	0.21	0.10	1.00
Clearance Time (s)	4.5	6.5		5.5	6.5	6.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.5	5.0		3.0	5.0	5.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	311	1587		103	1186	499	251	97	218	302	171	1373
v/s Ratio Prot	c0.27	0.32		0.03	c0.32		0.05	0.01	0.01	c0.18	0.01	
v/s Ratio Perm						0.13						c0.53
v/c Ratio	1.23	0.65		0.41	0.88	0.37	0.29	0.16	0.05	0.87	0.12	0.53
Uniform Delay, d1	44.3	21.0		49.0	33.3	26.1	41.2	50.3	38.6	43.4	46.3	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	130.3	1.3		2.6	8.2	1.0	0.5	0.6	0.1	22.7	0.2	1.4
Delay (s)	174.6	22.2		51.7	41.6	27.1	41.7	50.9	38.7	66.1	46.5	1.4
Level of Service	F	C		D	D	C	D	D	D	E	D	A
Approach Delay (s)		63.6			38.6			41.5			19.3	
Approach LOS		E			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	42.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	112.9	Sum of lost time (s)	18.5
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 3: OR 42

Movement	NE	NE	NE	SW	SW
Directions Served	T	T	R	T	T
Maximum Queue (ft)	163	152	55	186	191
Average Queue (ft)	56	53	6	87	98
95th Queue (ft)	135	131	32	214	228
Link Distance (ft)	712	712	712		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 10: OR 42 & Lookingglass Rd

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	39	7	6	18	12	683	50
Average Queue (ft)	11	0	0	1	0	398	24
95th Queue (ft)	36	5	4	10	6	824	64
Link Distance (ft)		2631	2631	812		1422	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200				200		25
Storage Blk Time (%)						97	4
Queuing Penalty (veh)						20	5

Intersection: 16: OR 42 & Heatherwood Ln

Movement	SE	NE	NE	NE	SW	SW
Directions Served	LR	L	T	T	T	TR
Maximum Queue (ft)	37	28	18	13	12	6
Average Queue (ft)	7	3	1	0	0	0
95th Queue (ft)	28	17	8	7	9	4
Link Distance (ft)	280		691	691	758	758
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		50				
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 19: OR 42 & Melody Ln/Jackie Ave

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (ft)	30	17	19	12	11	33
Average Queue (ft)	2	1	1	1	1	4
95th Queue (ft)	15	11	12	7	9	22
Link Distance (ft)		758	758	1827	1827	395
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	250					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 20: Umpqua Safari & OR 42

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	L	T	LR
Maximum Queue (ft)	12	7	29	6	35
Average Queue (ft)	0	0	3	0	9
95th Queue (ft)	4	0	16	0	34
Link Distance (ft)	812	812		744	448
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			50		
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 30: Pepsi Rd & OR 42

Movement	EB	EB	EB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	L	R
Maximum Queue (ft)	12	11	6	71	7	76	66
Average Queue (ft)	0	0	0	27	0	21	32
95th Queue (ft)	6	8	4	57	5	61	64
Link Distance (ft)	744	744			700	848	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			125	100			25
Storage Blk Time (%)				0		13	8
Queuing Penalty (veh)				0		6	1

Intersection: 31:

Movement	EB
Directions Served	T
Maximum Queue (ft)	114
Average Queue (ft)	4
95th Queue (ft)	82
Link Distance (ft)	284
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 40: OR 42 & Helweg Rd

Movement	EB	EB	EB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (ft)	27	15	12	5	31
Average Queue (ft)	2	1	1	0	5
95th Queue (ft)	12	9	10	4	24
Link Distance (ft)		700	700	2242	557
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 50: Andorra Dr/Rolling Hills Rd & OR 42

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	50	12	12	75	36	24	166	150
Average Queue (ft)	12	0	0	15	1	1	57	55
95th Queue (ft)	37	6	9	48	22	13	132	117
Link Distance (ft)		2242	2242		691	691	375	415
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	350			200				
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 60: OR 42 & Landers Ave

Movement	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	TR	L	R
Maximum Queue (ft)	52	6	21	17	390	75
Average Queue (ft)	12	0	1	1	178	23
95th Queue (ft)	37	5	19	12	393	76
Link Distance (ft)		1827	552	552	588	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	400					50
Storage Blk Time (%)					70	1
Queuing Penalty (veh)					11	0

Intersection: 70: Emils Way & OR 42

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	48	29	38	123	44	58	282	100
Average Queue (ft)	7	2	2	43	2	2	169	29
95th Queue (ft)	26	16	17	92	19	24	321	76
Link Distance (ft)		552	552		877	877	247	277
Upstream Blk Time (%)							34	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)	175			250				
Storage Blk Time (%)				0				
Queuing Penalty (veh)				0				

Intersection: 80: Carnes Rd & OR 42

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	395	450	416	370	561	565	514	152	266	273	422
Average Queue (ft)	252	259	248	266	469	477	181	58	132	178	181
95th Queue (ft)	415	403	360	471	611	601	394	115	230	285	355
Link Distance (ft)		877	877		520	520	520		602		457
Upstream Blk Time (%)					18	20	1				1
Queuing Penalty (veh)					101	114	5				0
Storage Bay Dist (ft)	375			225				175		250	
Storage Blk Time (%)	6	1		3	47			0	5	4	2
Queuing Penalty (veh)	29	2		20	78			0	4	13	5

Intersection: 90: Art Mill Ln & OR 42

Movement	EB	EB	WB	WB	WB
Directions Served	T	TR	T	T	T
Maximum Queue (ft)	24	32	629	648	574
Average Queue (ft)	2	2	242	246	189
95th Queue (ft)	20	19	732	742	662
Link Distance (ft)	520	520	1254	1254	1254
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)			21		
Queuing Penalty (veh)			0		

Intersection: 100: Winery Ln & OR 42

Movement	EB	EB	WB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	T	LR
Maximum Queue (ft)	118	66	34	479	513	347	35
Average Queue (ft)	16	5	4	21	35	12	6
95th Queue (ft)	109	50	21	199	262	141	28
Link Distance (ft)	1254	1254		694	694	694	274
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			150				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 110: Grant Smith Rd/OR 99 & OR 42

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	R	L	T
Maximum Queue (ft)	444	623	578	544	733	744	390	165	77	77	259	404
Average Queue (ft)	359	325	265	123	597	604	335	61	23	10	182	65
95th Queue (ft)	515	686	530	424	854	877	519	129	65	47	279	281
Link Distance (ft)		694	694		712	712			960			890
Upstream Blk Time (%)		3	0		8	11						
Queuing Penalty (veh)		21	0		55	73						
Storage Bay Dist (ft)	300			400			175	200		200	150	
Storage Blk Time (%)	36	1		0	43	62	4	0			20	0
Queuing Penalty (veh)	169	5		0	17	186	20	0			140	0

Intersection: 110: Grant Smith Rd/OR 99 & OR 42

Movement	SB
Directions Served	R
Maximum Queue (ft)	264
Average Queue (ft)	32
95th Queue (ft)	191
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	175
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1102

3: OR 42 Performance by approach

Approach	NE	SW	All
Denied Del/Veh (s)	0.0	41.5	20.9
Total Del/Veh (s)	8.1	9.8	9.0

10: OR 42 & Lookingglass Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.6	0.1
Total Del/Veh (s)	2.0	1.2	302.1	23.0

16: OR 42 & Heatherwood Ln Performance by approach

Approach	SE	NE	SW	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	9.8	1.0	1.0	1.0

19: OR 42 & Melody Ln/Jackie Ave Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	0.8	2.4	11.0	1.6

20: Umpqua Safari & OR 42 Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.0	0.9	10.5	1.0

30: Pepsi Rd & OR 42 Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	2.2	0.1
Total Del/Veh (s)	0.9	1.4	15.0	1.6

31: Performance by approach

Approach	EB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	3.4	3.4

40: OR 42 & Helweg Rd Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	0.8	2.5	22.4	1.8

50: Andorra Dr/Rolling Hills Rd & OR 42 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	2.4	1.9	36.0	47.1	4.0

60: OR 42 & Landers Ave Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.9	0.0
Total Del/Veh (s)	2.2	2.5	198.6	9.5

70: Emils Way & OR 42 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	70.8	0.1	3.7
Total Del/Veh (s)	2.1	9.1	121.0	64.6	12.6

80: Carnes Rd & OR 42 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	1.4	2.5	0.8
Total Del/Veh (s)	44.4	57.2	28.4	36.7	47.6

90: Art Mill Ln & OR 42 Performance by approach

Approach	EB	WB	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	4.3	30.4	19.0

100: Winery Ln & OR 42 Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	3.9	9.5	11.5	7.1

110: Grant Smith Rd/OR 99 & OR 42 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.5	3.5	3.8	1.3
Total Del/Veh (s)	39.7	88.2	29.4	17.7	51.0

Total Network Performance

Denied Del/Veh (s)	13.7
Total Del/Veh (s)	111.1

3: OR 42 Performance by movement

Movement	NET	NER	SWT	All
Denied Del/Veh (s)	0.0	0.0	41.5	20.9
Total Del/Veh (s)	9.1	3.6	9.8	9.0

10: OR 42 & Lookingglass Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	1.1	0.2	0.0	0.0	0.3	3.1	0.1
Total Del/Veh (s)	9.3	1.9	1.3	0.8	305.6	278.1	23.0

16: OR 42 & Heatherwood Ln Performance by movement

Movement	SER	NEL	NET	SWT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.8	8.1	1.0	1.0	1.0

19: OR 42 & Melody Ln/Jackie Ave Performance by movement

Movement	EBL	EBT	WBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	6.6	0.8	2.4	11.0	1.6

20: Umpqua Safari & OR 42 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	1.0	0.6	3.7	0.9	18.6	6.4	1.0

30: Pepsi Rd & OR 42 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.0	0.2	2.9	0.1
Total Del/Veh (s)	0.9	0.4	7.0	1.2	35.8	8.3	1.6

31: Performance by movement

Movement	EBT	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	3.4	3.4

40: OR 42 & Helweg Rd Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	5.5	0.8	2.5	2.1	22.4	1.8

50: Andorra Dr/Rolling Hills Rd & OR 42 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.5	0.0	0.0	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	11.0	2.3	1.4	5.3	1.9	0.8	49.0	24.5	54.1	28.6	4.0

60: OR 42 & Landers Ave Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	3.9	0.0
Total Del/Veh (s)	17.2	1.9	2.6	1.7	214.3	113.5	9.5

70: Emils Way & OR 42 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	68.1	71.7	0.1	0.1	3.7
Total Del/Veh (s)	19.5	2.0	0.5	18.9	8.4	6.8	153.3	110.2	83.8	42.2	12.6

80: Carnes Rd & OR 42 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.7	0.7	0.1	3.7	0.6	0.6	3.8	1.6	1.6
Total Del/Veh (s)	98.6	31.6	27.7	71.5	68.0	16.9	35.1	33.1	22.5	51.4	33.0	23.9

80: Carnes Rd & OR 42 Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	47.6

90: Art Mill Ln & OR 42 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	4.3	30.4	19.0

100: Winery Ln & OR 42 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	3.9	2.2	21.9	9.4	11.5	7.1

110: Grant Smith Rd/OR 99 & OR 42 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.0	0.0	1.2	0.3	1.2	4.0	0.4	3.9	3.9	3.0	3.8
Total Del/Veh (s)	88.6	21.4	19.1	56.5	101.5	48.7	46.5	54.8	2.6	47.1	48.7	5.6

110: Grant Smith Rd/OR 99 & OR 42 Performance by movement

Movement	All
Denied Del/Veh (s)	1.3
Total Del/Veh (s)	51.0

Total Network Performance

Denied Del/Veh (s)	13.7
Total Del/Veh (s)	111.1

OR 42 Expressway Management Plan
Lookingglass Road to I-5 Exit 119

Technical Memorandum #5
Concept Development and Evaluation

Prepared for

Oregon Department of Transportation, Region 3
3500 NW Stewart Parkway
Roseburg, Oregon 97470

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon

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5. CONCEPT DEVELOPMENT AND EVALUATION

This memorandum presents the preliminary improvement concepts developed to address long-range deficiencies in the OR 42 corridor. The goal of the identified improvement concepts is to help achieve the goals and objectives set forth for this project, while addressing identified deficiencies for all modes.

Once concepts are selected for further analysis, they will be combined to create comprehensive improvement strategies. These strategies will then be evaluated as a whole to ensure the improvements work well together.

5.1. Concept Development

Each improvement concept was developed to address specific deficiencies, safety issues, or access concerns. These concepts were developed based upon available standards, warrants, perceived need, safety data, traffic operations, and community livability. Concepts were not limited to roadway issues, and include bicycle, pedestrian, and transit-related projects.

The concepts were developed keeping in mind the four goals identified for the OR 42 Expressway Management Plan:

1. Improve safety and operations of the expressway corridor for all modes of travel.
2. Upgrade the corridor to meet Expressway design and performance standards.
3. Facilitate freight travel by maintaining efficient traffic movement through the corridor.
4. Develop integrated transportation facilities and services that support economic development.
5. Provide better accessibility to the Cities of Roseburg and Winston and the Green UUA consistent with the adopted local comprehensive land use and transportation plans.

This memorandum considers changes/improvements in the following categories:

- **Multi-Modal Improvements** – These concepts identify potential improvements to enhance bicycle, pedestrian, and transit facilities along the OR 42 corridor.
- **Intersection Improvements** – These concepts identify potential improvements to improve traffic flow, provide additional capacity, or address safety concerns at individual intersections within the OR 42 corridor.
- **Network Connectivity and Access Control** – These concepts identify potential roadway connections that would improve access for local traffic, address conformity to access control standards along OR 42, and improve safety.

The proposed concepts often have overlap in purpose and benefits. For instance, an intersection improvement with the primary purpose of improving safety may also include operational benefits, although not being proposed for that purpose. Linkages between purpose and benefits are discussed in the evaluations.

The concepts identified in this memorandum are above and beyond any other projects that have been identified for implementation along the corridor either through ODOT's 2012-2015 Statewide Transportation Improvement Program (STIP).

5.1.1. Multi-Modal Improvements

In alignment with the goals of this plan, the proposed multi-modal improvements provide enhanced bicycle, pedestrian, and transit facilities throughout the corridor.

A multi-use trail runs immediately adjacent to OR 42 along its north side for the entire length between Lookingglass Road and OR 99. This trail provides continuous bicycle and pedestrian facilities to serve through-travel, and local trips along the north side. There are only a few sections of OR 42 within the study area with sidewalks or marked bike lanes and only two intersections with marked crosswalks (Carnes Road/OR 42 and Grant Smith Road/OR 42). On the south side of OR 42, sidewalks and bike lanes are present on OR 42 southwest of Lookingglass Road but these facilities end where the expressway begins. Some isolated segments of bike lanes and sidewalks are also present at the intersections of Carnes Road, and Roberts Creek Road.

In alignment with Goals 1 and 4 of this plan, the proposed multi-modal improvements link continuous bicycle and pedestrian facilities along both sides of OR 42 that may reduce the need to cross the highway or use the highway shoulder. The Oregon Bicycle and Pedestrian Design Guide[1] recommends separated paths rather than shoulders and sidewalks for facilities with high speeds and high traffic volumes. Wherever possible, these concepts provide separated bicycle and pedestrian facilities along OR 42 within the available right of way (ROW), or provide facilities along parallel routes.

5.1.2. Intersection Improvements

These intersection improvements concepts address safety and operational deficiencies at individual intersections within the OR 42 corridor.

Some improvements are targeted at locations that fail to meet the state's mobility targets during the corridor planning period. However, these improvements may also have added safety benefits. Conversely, many of the concepts proposed to improve safety improvement will also have operational affects.

Improving safety throughout the OR 42 corridor has been identified as a priority, and is consistent with the goals of this plan. A roadway characteristics audit[2] was performed in conjunction with a detailed crash history analysis[3] to identify measures at specific locations or

[1] Oregon Bicycle and Pedestrian Design Guide, ODOT, 2011

[2] The roadway characteristics audit was performed using aerial imagery and ODOT Video Log.

[3] The crash data used in this safety investigation was from the most recent six-year period available (January 1, 2005 to December 31, 2010).

general strategies for improving overall safety. While some improvement concepts are targeted at locations with either a high frequency of crashes, or fatal and/or serious injuries, some concepts were identified due to roadway attributes and environmental factors, or that may contribute to future crashes.

5.1.3. Network Connectivity and Access Control

These concepts identify potential roadway connections that would improve access for local traffic, facilitate access control along OR 42, and improve safety.

The safety of a roadway is closely related to the location, orientation, and frequency of access points. Research has clearly shown a direct correlation between the number of access points and collision rates. Typically, as the number of access points increases, so do collision rates. Upgrading the corridor to meet Expressway standards with improved access control is one strategy to help improve safety throughout the corridor.

5.2. Concept Evaluation

Not all of the concepts proposed in this memorandum will be recommended for implementation. Each improvement concept will be evaluated with regard to applicable impacts (e.g. traffic operations, safety, environmental, etc.), feasibility, stakeholder feedback, and ability to meet the goals of the EMP.

The concept analysis included traffic operations, road geometries and ROW requirements, environmental and land use consequences, and cost opinions.

5.2.1. Traffic Operations and Safety

Traffic operations were evaluated for concepts that were identified to address operational deficiencies. The operational assessment focuses on the volume-to-capacity (v/c) ratio for the 2035 future condition. Operational results for the concepts were compared to the mobility targets set forth in the Oregon Highway Plan (OHP)[4] and Highway Design Manual[5] (HDM).

At intersections where potential changes in traffic control or turn lanes were considered, the procedures in the ODOT Analysis Procedures Manual (APM) were followed. For traffic signal concepts, the ODOT preliminary traffic signal warrants[6] were evaluated. For potential turn lanes at unsignalized intersections, the APM turn lane criteria[7] were evaluated. Existing traffic

[4] Table 6: Volume to Capacity Ratio Targets for Peak Hour Operating Conditions, 1999 Oregon Highway Plan, Amended December 2011, online reference: http://www.oregon.gov/ODOT/TD/TP/OHP2011.shtml

[5] Table 10-1: 20 Year Design-Mobility Standards (Volume/Capacity [V/C] Ratio), Highway Design Manual, 2003, online reference: http://egov.oregon.gov/ODOT/HWY/ENGSERVICES/hwy_manuals.shtml

[6] Section 7.4 Traffic Signal Warrants, Analysis Procedures Manual, April 2006, Updated January 2011, online reference: http://www.oregon.gov/ODOT/TD/TPAU/docs/A_APM/APM.pdf

[7] Section 7.2 Turn Lane Criteria, Analysis Procedures Manual, April 2006, Updated January 2011, online reference: http://www.oregon.gov/ODOT/TD/TPAU/docs/A_APM/APM.pdf. Note: These criteria are also consistent with the criteria in Appendix F of the Highway Design Manual.

volumes were applied to determine if warrants for traffic signals or criteria for turn lanes might be met today. Year 2035 traffic volumes were also evaluated to determine potential need in the future.

The existing (2011) and future baseline (2035) traffic volumes have been attached to this memo (Figure 5-1– Existing and Figure 5-2– Future) for easy reference.

Some improvements are focused on addressing safety concerns or may address safety as well as traffic operations deficiencies. Crash patterns from the six-year analysis period (2005 through 2010) are discussed for those improvements that address safety.

5.2.2. Basic Roadway Geometries and Right-of-Way Requirements

Evaluations of basic roadway geometry and ROW needs were conducted for concepts that involve infrastructure improvements. These items are addressed in the detailed concept discussions.

5.2.3. Environmental and Land Use Assessment

Impacts to resources were qualitatively assessed based on the data assembled for the environmental and land use reconnaissance. The level of analysis of the study area is designed to identify those areas judged to have considerable potential for conflict.

5.2.4. Concepts Cost Opinions

Rough order of magnitude cost opinions were developed using present day dollars and are consistent with standard estimating methods. The estimates include a contingency factor and preliminary engineering but do not include ROW, utility relocation, or hazardous material costs. The cost opinions are intended to help differentiate alternatives by approximating the relative costs of each concept.

5.3. Organization of Improvement Concepts

The OR 42 EMP focuses on the 3.32-mile segment designated as an Expressway from Lookingglass Road to the ramps at I-5 Exit 119. There are 18 improvement concepts that have been developed at various locations.

The improvement concepts have various strategies to consider. Many of the concepts can be combined with others; some provide different solutions to address the same issue. Within several of the concepts, there may be different options. The 18 concepts are discussed in the next three sections.

5.4. Multi-Modal Improvements

Five potential multi-modal improvements were identified during the concept development process to bring OR 42 to enhance bicycle, pedestrian, and transit facilities. A brief summary of the projects is presented in Table 5-1, with locations identified in Figure 5-3.

Table 5-1. Multi-Modal Improvement Concepts

ID	Location	General Description	Purpose	Category
1	Lookingglass Road to OR 99 (MP 74.61-76.22)	Enhance bicycle and pedestrian facilities along the south side of OR 42	Provide facilities along OR 42 for all modes of travel	Bicycle & Pedestrian
2	Lookingglass Road to Grant Smith Road (MP 73.88-76.22)	Install roadway lighting at key locations	Enhance visibility and safety on the expressway	Safety
3	Winston Section (MP 74.34)	Connect Winston Section Road to the multi-use path on the north side of OR 42 with a multi-use path undercrossing near the South Umpqua River (under bridge)	Provide a safe route for bicyclists and pedestrians to cross OR 42	Bike/Pedestrian
4	Grange Road (MP 75.53)	Construct sidewalks with curb and gutter along length of road	Provide parallel route to OR 42 for bicyclists and pedestrians	Bicycle & Pedestrian
5	NW Corner of Carnes Road (MP 75.72)	Provide a park and ride facility that coordinates with the adjacent bus stop	Improved transit facilities	Transit

5.4.1. Concept 1 – Enhance Bicycle/Pedestrian Facilities along the South Side of OR 42

A multi-use trail runs immediately adjacent to OR 42 along its north side for the entire length between Lookingglass Road and OR 99. This trail provides continuous bicycle and pedestrian facilities to serve through-travel, and local trips along the north side. Wide shoulders present on the south side of the highway can also serve bicyclists and pedestrians but with no physical separation from the adjacent, high speed traffic. Furthermore, the high traffic volumes make crossing difficult. A pedestrian, or bicyclist, who start or ends his trip on the south side of the expressway, must cross the four lanes of traffic to get to the path. Pedestrians and bicyclists using the shoulder on the south side of the expressway have been observed several times when collecting other inventory data for the expressway. These users have opted not to cross the expressway for reasons which may include both safety concerns and inconvenience.

This concept would enhance bicycle and pedestrian facilities along the south side of OR 42 to facilitate through-travel, support local trips to/from the south side of the highway, and reduce the need to cross the highway or use the highway shoulder. This concept provides two options for providing these facilities:

- **Option A**: Maintain directional bicycle traffic along the south shoulder of OR 42, and install a 6-foot sidewalk with a landscape buffer for pedestrian traffic.
- **Option B**: Construct a multi-use path on the south side of OR 42 that is separated by a landscape buffer to facilitate bi-directional bicycle and pedestrian traffic.

Neither of these options assumes that the bridges over the South Umpqua River or the Central Oregon and Pacific (CORP) Railroad will be widened and that the substandard facilities will remain on those sections of roadway.

Concept 1 – Traffic Operations and Safety

Current traffic demand on the expressway ranges from approximately 15,000 vpd at the west end of the study area, near Lookingglass Road, to approximately 23,000 vpd at the east end of the study area, near Grant Smith Road. The 2035 forecast demand is expected to range from 22,000 vpd near Lookingglass Road to 29,000 vpd near Grant Smith Road.

Both options would provide a continuous facility on the south side of OR 42 which would potentially decrease the need for bicyclists and pedestrians to cross the expressway. Although the multi-use path is present on the north side of the expressway, the high traffic volumes make crossing difficult. Pedestrians or bicyclists who start or end their trip on the south side of the expressway, must cross the four lanes of traffic to get to the path. Pedestrians and bicyclists using the shoulder on the south side of the expressway have been observed several times when collecting other inventory data. These users have opted not to cross the expressway for reasons which may include both safety concerns and inconvenience.

Concept 1, Option A would stripe an eastbound bike lane on the south side of the roadway, and would provide a buffered sidewalk for pedestrians. The Oregon Bicycle and Pedestrian Design Guide recommends separated paths rather than shoulders and sidewalks for facilities with high speeds and high traffic volumes.

Concept 1, Option B would provide a buffer between high-speed traffic and bicycles/ pedestrians to allow for two-way traffic along a multi-use path. This option would be consistent with the Oregon Bicycle and Pedestrian Plan recommendations, and would increase safety for vulnerable users.

Concept 1 – Basic Roadway Geometries and Right-of-Way Requirements

Both options within this concept would occur within the available right of way (ROW), and would include illumination for the new facilities along the south side of OR 42.

Concept 1, Option A would include an 8-foot right shoulder, 6-foot buffer, a 6-foot landscape buffer, and a 6-foot sidewalk along the south side of OR 42. Drainage improvements would be involved with the proposed configuration. This option assumes that no retaining walls would be required, and that the slope would change from 6:1 from the edge of pavement to 4:1 from the back of sidewalk.

Concept 1, Option B would provide a 5-foot buffer between high-speed traffic and bicycles/pedestrians to allow for two-way traffic along a 10-foot multi-use path. This option assumes that no retaining walls would be required, and that the slope would change from 6:1 from the edge of pavement to 3:1 from the edge of the multi-use path. This option would be

consistent with the Oregon Bicycle and Pedestrian Plan recommendations, and would increase safety for vulnerable users.

Concept 1 – Environmental and Land Use Assessment

There are riparian corridors, aquatic habitat, wildlife habitat and wetlands along the South Umpqua River and Roberts Creek. Disturbance to undeveloped areas especially should be avoided if possible. Wetland delineations will need be conducted once concept footprints are identified. Impacts to wetlands should be avoided; mitigation and permitting will be necessary if impacts cannot be avoided. Best management practices incorporated into project design and construction can help minimize impacts.

Also, the South Umpqua Floodway[8], on both sides of the South Umpqua River, is over 2,000 feet wide. Fill in floodways and floodplains should be avoided.

Concept 1, Option A assumes that drainage would be required on the south side.

Concept 1, Option B assumes that existing drainage would be adequate on the south side.

Concept 1 – Cost Opinions

This estimate does not include costs for widening bridges or lengthening culverts. The largest difference between the costs of Option A versus Option B is the need for drainage improvements.

Concept 1, Option A improvements are estimated at $5.5 million for the improvements related to the bike lane, buffer, and sidewalk.

Concept 1, Option B improvements are estimated at $3.8 million for the multi-use pathway and associated improvements.

Neither estimate includes costs for widening bridges or lengthening culverts.

5.4.2. Concept 2 – Add Roadway Lighting at Key Locations

Roadway lighting provides increased visibility for all modes and helps minimize conflicts between modes. While some street lighting exists in the corridor, Concept 2 would install additional lighting at key locations between Lookingglass Road and the Grants Pass Road (MP 73.88-76.22) to improve safety. Specific locations have not been identified but lighting should be considered at higher volume unsignalized intersections, and other locations where lighting could improve safety. There may be an opportunity to have roadway lighting also provide spillover coverage for proposed pedestrian and bicycle facilities (Concept 1).

[8] The "Regulatory Floodway" is the channel of the South Umpqua River and the adjacent lands that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

Concept 2 – Traffic Operations and Safety

Lighting can improve safety at locations where there are likely conflicts between vehicles, pedestrians, and bicycles. The greatest benefits are offered where surrounding facilities currently provide little light across the roadway. Lighting can also increase the attractiveness of pedestrian and bicycle facilities after dusk.

Concept 2 – Basic Roadway Geometries and Right-of-Way Requirements

Improvements included in this concept would occur within the available right of way (ROW).

Concept 2 – Environmental and Land Use Assessment

There are not any anticipated environmental or land use impacts associated with the proposed lighting improvements. Lighting spillover and sky glow may reach adjacent properties.

Concept 2 – Cost Opinions

The estimated cost of the proposed lighting improvements will be dependent on the number of locations identified and what other improvements might also be happening in the corridor. Specific recommendations and cost opinions for additional illumination will be determined as the preferred concept is identified.

5.4.3. Concept 3 – Multi-Use Undercrossing at Winston Section Road

While a pedestrian or bicyclist can cross the expressway at any intersection, the high traffic volumes make crossing four lanes of high speed traffic very difficult. Only two traffic signals, located at the east end of the corridor are available to facilitate crossing movements.

A new multi-use undercrossing of the South Umpqua bridges would connect the multi-use path on the north side of OR 42 with Winston Section Road. This connection would serve as the only grade-separated crossing of OR 42 for bicycles and pedestrians, and would improve north-south connectivity.

Concept 3 – Traffic Operations and Safety

Current traffic demand along OR 42 at this location is approximately 17,000 vpd, with a higher 2035 forecast demand of approximately 25,000 vpd. This undercrossing minimizes the likelihood that pedestrians and bicycles will cross OR 42 at uncontrolled and at-grade locations. This will improve safety for vulnerable users, and increase the attractiveness of alternative travel modes.

The undercrossing users would have to travel some distance out of direction to connect with the multi-use path or Winston Section Road. The connection would use existing hillsides to get from OR 42 down under the bridges and around to the other side of the expressway.

Concept 3 – Basic Roadway Geometries and Right-of-Way Requirements

The proposed pathway and undercrossing can be constructed within the existing ROW. The pathway would be approximately 1,000 feet long, with a typical width of 10 feet. Minimal excavation would be required because of the existing terrain.

Concept 3 – Environmental and Land Use Assessment

There is a riparian corridor, aquatic habitat, wildlife habitat and wetlands along the South Umpqua River. However, the area underneath the bridges is already heavily disturbed because unpaved access is already present. Further disturbance would likely be avoidable or minimized. Wetland delineations may be conducted once concept footprints are identified. Impacts to wetlands should be avoided; mitigation and permitting will be necessary if impacts cannot be avoided. There would be no land use impacts associated with this concept.

Concept 3 – Cost Opinions

The cost for this concept is estimated at $500,000.

5.4.4. Concept 4 – Enhance Bicycle and Pedestrian Facilities along Grange Road

As described in Concept 1, a multi-use trail runs immediately adjacent to OR 42 along its north side for the entire length between Lookingglass Road and OR 99 but facilities on the south side are limited to the roadway shoulder and some sporadic sections of sidewalk. Despite the close proximity of high speed traffic, pedestrians and bicyclists use the shoulder on the south side of the expressway. These users have opted not to cross the expressway for reasons which may include both safety concerns and inconvenience.

Concept 4 would enhance bicycle and pedestrian facilities along the south side of OR 42 via Grange Road, a parallel route, rather than providing these facilities adjacent to the highway, as described for Concept 1. Similar to Concept 1, Concept 4 would enhance bicycle and pedestrian facilities along the south side of OR 42 to facilitate through-travel, support local trips to/from the south side of the highway, and reduce the need to cross the highway or use the highway shoulder. However, this option does not serve users along the entire length of the corridor; the improvements would extend along Grange Road from Rolling Hills Road to Roberts Creek Road.

Concept 4 – Traffic Operations and Safety

The enhanced bicycle and pedestrian facilities along Grange Road would decrease the need for bicyclists and pedestrians to cross the expressway, and would put users next to slow-speed vehicular traffic (approximately 25 mph). This concept would enhance bicycle and pedestrian mobility and safety, although it would involve a slight increase in travel distance for through traffic. Current traffic demand along Grange Road is very low, with approximately 800 vpd, with a slightly higher 2035 forecast demand of approximately 1,300 vpd.

Although it is considered desirable to provide bicycle and pedestrian facilities along a highway so that users have direct access to their destinations, the section of OR 42 between Rolling Hills

Road and the commercial area at Roberts Creek Road has no direct access to the highway. All of the residences and businesses in the area take access off Grange Road, thus the more direct local connection would actually be provided by facilities on Grange Road rather than along the expressway.

Concept 4 – Basic Roadway Geometries and Right-of-Way Requirements

This concept would occur within the available right of way (ROW), and would include illumination for the new facilities along Grange Road. Six foot sidewalks would be included on both sides of the roadway, but the roadway is assumed to have shared lanes for bicycles and low-speed vehicles.

Concept 4 – Environmental and Land Use Assessment

This option assumes that drainage would be included with the sidewalk installation. There are no anticipated environmental or land use impacts.

Concept 4 – Cost Opinions

Improvements associated with this concept are estimated at $5.5 million.

5.4.5. Concept 5 – Park-and-Ride Facilities and Transit Stop at Carnes Road

Park-and-ride facilities can be an important component of transit programs. They offer a way for users of various modes to transfer onto and off of transit, making transit ridership a more attractive option. These facilities can also be used to facilitate carpooling.

Currently, Umpqua Transit serves the study area with paratransit, fixed route, and commuter bus service on weekdays. South County Route 99 extends from Roseburg to Canyonville and runs along OR 42 between I-5 and Winston with a stop on Carnes Road. The Winston Commuter Route extends from Roseburg to Winston and also uses OR 42 and the stop on Carnes Road. The commuter service includes nine northbound bus runs and eight southbound bus runs each day.

Concept 5 would install a park-and-ride facility in the northwest quadrant of the OR 42 and Carnes Road intersection with an adjacent transit stop on OR 42 or Carnes Road. This property is currently owned by ODOT. This park-and-ride facility could make these existing services more accessible and attractive.

Concept 5 – Traffic Operations and Safety

Current traffic demand at this location is approximately 20,000 vpd, with a higher 2035 forecast demand of approximately 27,000 vpd.

Both auto and bus access to this site may be limited by the presence of standing queues and the high frequency of crashes reported at and between Emils Way and Carnes Road. Access to/from OR 42 would be limited to right-in and right-out movements. Access on Carnes Road

may also be limited to right-in and right-out movements because of the limited site frontage and the presence of standing queues from the traffic signal.

Concept 5 – Basic Roadway Geometries and Right-of-Way Requirements

The proposed facilities could be constructed within the existing ROW. Access would be restricted to right-in and right-out only. Approximately 75 to 125 parking spaces could be accommodated, depending on the chosen site plan.

Concept 5 – Environmental and Land Use Assessment

This concept would only involve impacts to ODOT-owned property in the northwest quadrant of the OR 42 and Carnes Road intersection. No environmental impacts are associated with this concept.

Concept 5 – Cost Opinions

Improvements for this concept are estimated at $1.0 million.

5.5. Intersection Improvements

Seven potential intersection improvements were identified to improve traffic flow, provide additional capacity, or address safety concerns. A brief summary of the projects is presented in Table 5-2 with concept locations identified in Figure 5-3. The following sections discuss in detail potential intersection improvements.

Table 5-2. Intersection Improvement Concepts

ID	Location	General Description	Purpose	Category
6	Lookingglass Road (MP 73.88)	Relocate Lookingglass Road to connect at 4-way intersection and install traffic signal	Improve operations and safety	Operations/ Safety
7	Rolling Hills Road (MP 74.77)	Signalize intersection	Improve operations and safety	Operations/ Safety
8	Rolling Hills Road (MP 74.77)	Add right-turn deceleration lane on OR 42 in the eastbound and westbound directions	Address existing safety concerns and decrease delay	Safety/ Operations
9	Landers Avenue (MP 75.42)	Add right-turn deceleration lane on OR 42 in the westbound direction	Address existing safety concerns and decrease delay	Safety/ Operations
10	Emils Way/ Grange Road (MP 75.53)	Add right-turn deceleration lane on OR 42 in the eastbound and westbound directions	Address existing safety concerns and decrease delay	Safety/ Operations
11	Carnes Road/ Roberts Creek Road (MP 75.72)	Increase intersection capacity	Improve operations and safety	Operations/ Safety
12	OR 99/Grant Smith Road (MP 76.22)	Increase intersection capacity	Improve operations and safety	Operations/ Safety

5.5.1. Concept 6 – Relocate and Signalize Lookingglass Road

Lookingglass Road provides the most direct access from OR 42 to Wildlife Safari, a significant regional attraction. It also provides a parallel route to OR 42 through Winston. The Lookingglass Road intersection with OR 42 is currently STOP-controlled. Although the delays on Lookingglass Road are not very long during the weekday peak period of activity on OR 42, they are expected to be significantly longer in the future.

A new traffic signal at the intersection of OR 42 and Lookingglass Road (MP 73.88) would improve operations for left turning vehicles from Lookingglass Road and help facilitate peak recreational traffic during the summer months. The current alignment of this roadway is not ideal for a traffic signal, however, as both the eastbound OR 42 approach and southbound Lookingglass road approach are on a downgrade. Relocation of Lookingglass Road to a more level location, which could allow for a 4-way intersection combined with another street to the south of OR 42, would allow for a preferred signalized connection. This concept considers three relocation options:

- **Option A**: Close the current connection of Lookingglass Road and extend the roadway to the east to create a 4-way intersection with Pepsi Road (MP 74.19). Install a traffic signal at new 4-way intersection.
- **Option B**: Close the current connection of Lookingglass Road and extend the roadway to the east to create a 4-way intersection with Umpqua Safari Road (MP 74.03), with a possibility of extending Pepsi Road to the west to combine with Umpqua Safari Road. Install a traffic signal at new 4-way intersection.
- **Option C**: Either close the current connection of Lookingglass Road or limit it to right-in only, and align the roadway to create a 4-way intersection with Brosi Orchard Road (MP 73.76). Install a traffic signal at new 4-way intersection.

Concept 6 – Traffic Operations and Safety

Current traffic demand along OR 42 at this location is approximately 15,000 vpd, with a higher 2035 forecast demand of approximately 22,000 vpd. Current demand on Lookingglass Road is estimated at 3,000 vpd with forecast demand near 4,000 vpd. Daily volume data is not available for Pepsi Road or Brosi Orchard Road. Based on these data, preliminary analysis indicates that existing traffic volumes on Lookingglass Road and OR 42 meet ODOT's preliminary traffic signal warrants.

There were no crashes reported at the current intersections of OR 42 at Lookingglass Road, Umpqua Safari Road, or Pepsi Road.

Concept 6, Option A would reduce delays and queues for traffic turning left from the side streets (Lookingglass Road and Pepsi Road) during peak periods, but result in increased delay for through traffic on OR 42 throughout the day. In addition, a signal installation typically increases the potential for rear-end collisions due to a high frequency of stopping vehicles.

Concept 6, Option B would have similar operational and safety results to those for Option A with reduced delay and queues for Lookingglass Road and Umpqua Safari Road but added delay for through traffic on OR 42. If Pepsi Road were connected to Umpqua Safari Road, the additional operational benefits would be increased.

Concept 6, Option C could not be analyzed because Brosi Orchard Road is outside of the current expressway study area and traffic data is not available. However, this option would still be located on a hill, where grade issues would be a concern. Thus, delays to the through traffic on OR 42 would be greater than the other two options as vehicles stopped on the hill would be slower to start up and regain travel speed that at a level location.

Concept 6 – Basic Roadway Geometries and Right-of-Way Requirements

Each of the proposed relocation options would require additional ROW. The cross section of Lookingglass Road extensions would include 12 foot travel lanes and 6 foot shoulders.

Concept 6, Option A would include approximately 2,100 feet of additional roadway primarily outside of the existing ROW. This extension would require widening or construction of a box culvert and bridge, and would likely impact two homes on the north side of OR 42 opposite Pepsi Road.

Concept 6, Option B would include approximately 1,000 feet of additional roadway on the north side of OR 42, and approximately 1,100 feet of additional roadway (for the Pepsi Road extension) on the south side of OR 42, primarily outside of the existing ROW. This option is similar to Option A, but combines improvements on the north and south to avoid impacts to homes north of OR 42 opposite Pepsi Road. Bridge and culvert modifications would be required on the south side of OR 42.

Concept 6, Option C would include approximately 600 feet of additional roadway primarily outside of the existing ROW. This alignment would result in a skewed intersection at OR 42 with a steeper grade than at the current Lookingglass Road approach.

Concept 6 – Environmental and Land Use Assessment

Two of the options would have potential environmental impacts and all three options would have some type of land use impacts.

Concept 6, Option A would require widening or construction of a box culvert and bridge, and would likely impact two homes on the north side or OR 42 opposite Pepsi Road. The extension would require acquisition of ROW from lands north of OR 42. There are riparian corridors, aquatic habitat, wildlife habitat and wetlands near of the South Umpqua River. Disturbance to undeveloped areas especially should be avoided if possible. Wetland delineations should be conducted once concept footprints are identified. Impacts to wetlands should be avoided; mitigation and permitting will be necessary if impacts cannot be avoided.

Also, the South Umpqua Floodway, on both sides of the South Umpqua River, is over 2,000 feet wide. Fill in of floodways and floodplains should be avoided. This concept would interact with both the floodway and 100 year floodplain. No net rise will have to be demonstrated if improvements involve fill in floodways. Cut and fill requirements will need to be adhered to in floodplains.

This option would cross lands that are beyond both the City of Winston UGB that are zoned as Exclusive Farm Use. A goal exception would likely be needed for this option.

Concept 6, Option B would have similar environmental impacts as Option A, but many would be located on the south side of the expressway rather than the north side. This option would not have impacts to existing residential structures but would require acquisition of ROW for both the Lookingglass Road and Pepsi Road extensions.

This option would cross lands that are beyond both the City of Winston UGB that are zoned as Exclusive Farm Use. A goal exception would likely be needed for this option.

Impacts to the Umpqua Safari RV Park could raise environmental justice concerns about effects to Title VI populations.

Concept 6, Option C would include impacts to an existing structure and would require acquisition of ROW from landowners between Lookingglass Road and OR 42. This alignment would not have environmental impacts.

Concept 6 – Cost Opinions

Concept 6, Option A improvements are estimated at $6.0 million. This estimate includes costs for bridge and culvert improvements, as well as a traffic signal, but does not include ROW impacts.

Concept 6, Option B improvements are estimated at $6.0 million. This estimate includes costs for bridge and culvert improvements, as well as a traffic signal, but does not include ROW impacts.

Concept 6, Option C improvements are estimated at $1.5 million. This estimate includes a traffic signal, but does not include ROW impacts.

5.5.2. Concept 7 – Signalize Rolling Hills Road Intersection

There are no traffic signals for over a two-mile stretch along OR 42 between Carnes Road and the city of Winston. Without traffic signals, side street traffic must pull out into the high-speed traffic on the expressway when adequate gaps in the traffic stream are available. Making right turns is relatively easy but making left turns can be very difficult, particularly during the peak commuting periods during the day. Conditions for making left turns will only get worse as traffic volumes on the expressway continue to increase.

Concept 7 would install a new traffic signal at the intersection of OR 42 and Rolling Hills Road (MP 74.77) to improve operations and safety for side-street traffic. To support the need for a signal, this concept should be paired with other concepts that manage access to the highway and direct additional traffic to the Rolling Hills intersection. The Douglas County TSP includes a signal at this location and local street connectivity projects to enhance access to Rolling Hills Road.

Concept 7 – Traffic Operations and Safety

Current traffic demand along OR 42 east of this location is approximately 19,000 vpd, with a higher 2035 forecast demand of approximately 27,000 vpd. The current side-street demand from Rolling Hills is approximately 500 vpd. The Douglas County Transportation System Plan (TSP) includes the extension of Rolling Hills Road northward to connect with Happy Valley Road. With this extension, a significantly higher forecast volume of nearly 5,000 vpd is expected.

There were 22 crashes reported in the segment from Rolling Hills Road to Landers Avenue, 15 of which occurred at Rolling Hills Road. Two of these crashes resulted in fatal and/or serious injuries. Seventeen of the reported crashes were turning or angle collisions.

Preliminary signal warrants, based on traffic volumes, are not met under existing conditions or within five years assuming the current network configuration and access to OR 42. If access management east of this intersection directs more traffic to this location, or if Rolling Hills extends to Happy Valley Road, this signal would be warranted within approximately 5 to 10 years. Without other improvements, a signal would still be warranted at this location within the horizon year of 2035.

The addition of a traffic signal would reduce delays and queues, particularly for left turns from Rolling Hills Road and across the expressway. However, through traffic on OR 42 would experience increased delay throughout the day.

The addition of a traffic signal would likely reduce the frequency and severity of the turning and angle collisions by stopping the through traffic on OR 42 to allow vehicles to turn to and from Rolling Hills Road. However, a signal installation typically increases the potential for rear-end collisions due to a high frequency of stopping vehicles, but rear end collisions are typically much less severe than high speed turning and angle collisions.

Concept 7 – Basic Roadway Geometries and Right-of-Way Requirements

Signalization of Rolling Hills Road can occur within existing ROW.

Concept 7 – Environmental and Land Use Assessment

This concept would not have environmental or land use impacts.

Concept 7 – Cost Opinions

Signal improvements are estimated at $500,000, but costs of local connectivity improvements would be dependent upon the routes and cross-sections chosen.

5.5.3. Concept 8 – Right-Turn Deceleration Lanes at Rolling Hills Road

Currently there are no right-turn deceleration lanes on OR 42 at the Rolling Hills Road intersection (MP 74.77). Without right-turn lanes, vehicles making westbound and eastbound right turns must either decelerate significantly in the high-speed travel lane or steer partially into the shoulder, which can result in rear-end collisions.

Concept 8 would enhance safety for turning vehicles by adding a dedicated right-turn lane in both the eastbound and westbound directions to allow vehicles to decelerate safely in a lane separated from high-speed through traffic.

Concept 8 – Traffic Operations and Safety

Current traffic demand east of this location is approximately 19,000 vpd, with a slightly higher 2035 forecast demand of approximately 27,000 vpd. The current right-turn demand during the peak hour from OR 42 accounts for 2 to 4 percent of the total traffic on the highway.

Preliminary analysis using ODOT's turn lane criteria indicates that existing volumes are sufficient to warrant right-turn deceleration lanes for both the eastbound and westbound approaches of OR 42 at Rolling Hills Road.

Fifteen crashes were reported at this location in the 6-year analysis period, none of which were rear-end collisions involving vehicles making the westbound or eastbound right-turn movement.

Nevertheless, providing a right-turn deceleration lane would improve safety by allowing vehicles to decelerate away from high-speed through traffic. There would also be operational benefits for both the turning and through vehicles through reduced delays.

Concept 8 – Basic Roadway Geometries and Right-of-Way Requirements

The improvement would modify the northeast and southwest corners of the intersection to provide a deceleration lane of appropriate length to allow vehicles to slow to an appropriate turning speed. This lane can be accommodated within the existing ROW, although the adjacent drainage and multi-use path on the northeast quadrant would need to be shifted to the north. Lighting for the intersection of OR 42 at Rolling Hills Road is included in this concept.

Concept 8 – Environmental and Land Use Assessment

This concept would not impact adjacent properties, but would require a realignment of drainage and the multi-use pathway on the north side of OR 42.

Concept 8 – Cost Opinions

The estimated cost of Concept 8 is approximately $500,000.

5.5.4. Concept 9 – Right-Turn Deceleration Lane at Landers Avenue

Currently, there are no right-turn deceleration lanes on OR 42 at the Landers Avenue intersection (MP 75.42). As noted with Concept 8, without right-turn lanes, vehicles making a westbound right turn from OR 42 must either decelerate significantly in the high-speed travel lane or steer partially into the shoulder, which can result in rear-end collisions.

Concept 9 would enhance safety for right-turning vehicles by adding a dedicated right-turn lane to allow vehicles to decelerate safely in a lane separated from high-speed through traffic.

Concept 9– Traffic Operations and Safety

Current traffic demand at this location is approximately 19,000 vpd, with a slightly higher 2035 forecast demand of approximately 27,000 vpd. The current right-turn demand accounts for 6 to 7 percent of the total traffic on the highway.

Preliminary analysis using ODOT's turn lane criteria indicates that existing volumes are sufficient to warrant right-turn deceleration lanes on the westbound approaches of OR 42 at Landers Avenue.

Seven crashes were reported at this location in the 6-year analysis period, one of which was rear-end collisions involving a vehicle making the westbound right-turn movement. This crash resulted in a serious/incapacitating injury caused by a vehicle following a turning vehicle too closely. This type of collisions could be avoided by the addition of a right-turn deceleration lane.

In addition to the safety benefits, a right-turn deceleration lane would also provide operational benefits by reducing delays for through traffic.

Concept 9 – Basic Roadway Geometries and Right-of-Way Requirements

The improvement would modify the northeast corner of the intersection to provide a deceleration lane of appropriate length to allow vehicles to slow to an appropriate turning speed. This lane can be accommodated within the existing ROW, although the adjacent drainage and multi-use path would need to be shifted to the north. Lighting for the intersection of OR 42 at Landers Lane is included in this concept. The existing pavement width is 84 feet at this location.

Concept 9 – Environmental and Land Use Assessment

This concept would not impact adjacent properties, but would require a realignment of drainage and the multi-use pathway on the north side of OR 42.

Concept 9 – Cost Opinions

The estimated cost of Concept 9 is approximately $250,000.

5.5.5. Concept 10 – Right-Turn Deceleration Lanes at Emils Way/Grange Road

Currently, there are no right-turn deceleration lanes on OR 42 at the Emils Way/Grange Road intersection (MP 75.53). As noted with previous concepts, without right-turn lanes, vehicles making a right turn from OR 42 must either decelerate significantly in the high-speed travel lane or steer partially into the shoulder, which can result in rear-end collisions.

Concept 10 would enhance safety for right-turning vehicles by adding dedicated right-turn lanes on the westbound approach to Emils Way and eastbound approach to Grange Road to allow vehicles to decelerate safely in a lane separated from high-speed through traffic.

Concept 10 – Traffic Operations and Safety

Current traffic demand at this location is approximately 19,000 vpd, with a higher 2035 forecast demand of approximately 27,000 vpd. The current right-turn demand at Emils Way accounts for 1 to 2 percent of the total westbound traffic on the highway while the right-turn demand on Grange Road accounts for 4 to 6 percent of the total eastbound traffic on OR 42.

Preliminary analysis using ODOT's turn lane criteria indicates that existing volumes are sufficient to warrant right-turn deceleration lanes on both the westbound and eastbound approaches of OR 42 at Emils Way/Grange Road.

Thirteen crashes were reported at this location in the 6-year analysis period, none of which was rear-end collisions involving a right-turn movement.

Nevertheless, providing a right-turn deceleration lane would improve safety by allowing vehicles to decelerate away from high-speed through traffic. In addition to the safety benefits, a right-turn deceleration lane would also provide operational benefits by reducing delays for through traffic.

Concept 10 – Basic Roadway Geometries and Right-of-Way Requirements

The improvement would modify the northeast and southwest corners of the intersection to provide a deceleration lane of appropriate length to allow vehicles to slow to an appropriate turning speed. This lane can be accommodated within the existing ROW, although the adjacent drainage and multi-use path on the northeast quadrant would need to be shifted to the north. Lighting for the intersection of OR 42 at Emils Way/Grange Road is included in this concept. The existing pavement width is 84 feet at this location.

Concept 10 – Environmental and Land Use Assessment

This concept would not impact adjacent properties, but would require a realignment of drainage and the multi-use pathway on the north side of OR 42.

Concept 10 – Cost Opinions

The estimated cost of Concept 10 is approximately $500,000.

5.5.6. Concept 11 – Carnes Road/Roberts Creek Road Additional Turn Lanes

The signalized intersection of OR 42 with Carnes Road/Roberts Creek Road is currently exceeding ODOT's mobility targets for an expressway and the intersection has moderate delays and queuing during peak commuting periods. As volumes continue to grow both on the expressway and the intersecting roads, operations are expected to deteriorate to a condition where demand at the intersection will be near capacity. Many traffic movements would experience long delays with substantial queuing in all turn lanes. Many vehicles waiting to make a left turn would have to wait multiple green cycles to get through the intersection.

Concept 11 would improve the OR 42/Carnes Road/Roberts Creek Road intersection by adding capacity where needed. Four options are considered within this concept:

- **Option A (without Rolling Hills extension – Concept 13)**: Install dual left turns on the eastbound, westbound, and southbound approaches, and modify signals to provide protected left turns on all approaches. This concept would require a design exception to the HDM standard but would not need an alternative mobility standard to the OHP target. This option is consistent with the preferred alternative identified in the Interchange Area Management Plan for I-5 interchanges 119 and 120[9].
- **Option B (without Rolling Hills extension – Concept 13)**: Install dual left turns only for the eastbound and westbound approaches, and modify signals to provide protected left turns on all approaches. This concept would require an alternative mobility standard because it would exceed current OHP mobility targets.
- **Option C (<u>with</u> Rolling Hills extension – Concept 13)**: Install dual left turns only for the southbound approach, convert the westbound right-turn lane into a shared through/right, and modify signals to provide protected left turns on all approaches. This concept would require a design exception to the HDM standard but would not need an alternative mobility standard to the OHP target.
- **Option D (<u>with</u> Rolling Hills Road extension – Concept 13):** Install dual left turns only for the southbound approach, and modify signals to provide protected left turns on all approaches. This concept would require an alternative mobility standard because it would exceed current OHP mobility targets.

Options A and B consider what level of improvement would be needed without the Rolling Hills extension in order to understand the relative importance of the connection. The Rolling Hills extension is currently identified in the Douglas County TSP.

[9] The Interchange Area Management Plan (IAMP) for I-5 Interchanges 119 and 120 was completed in 2008 and has been adopted by the OTC and Douglas County. Interchange 119 connects I-5 with OR 42 at the eastern edge of the EMP study area.

Concept 11 – Traffic Operations and Safety

Current traffic demand along OR 42 at this intersection is approximately 20,000 vpd, with a higher 2035 forecast demand of approximately 29,000 vpd. The total daily entering volumes, including Carnes Road and Roberts Creek Road, is approximately 28,000 vpd, with a 2035 forecast demand of 40,000 vpd.

There is one segment identified in the worst 5% of the 2012 SPIS rankings within the corridor, which is at the intersection of Carnes Road/Roberts Creek Road. This intersection has the second highest number of reported collisions (39) within the study area in the six-year analysis period. One of these crashes involved a fatality, and 19 involved injuries. Fourteen of the reported crashes were turning collisions.

Each of the proposed improvement options include providing protected left turns where they are currently permitted, on the northbound and southbound approaches. This modification would reduce the potential for turning and angle collisions, which are crash types that typically involve injuries.

Concept 11, Option A assumes that the proposed extension of Rolling Hills Road does not occur. This option would provide a reduction in delay and queuing during peak periods, but result in the greatest impacts. This option would not meet the HDM mobility standard, but would nearly meet the OHP target with a v/c ratio of 0.81.

Concept 11, Option B also assumes that the proposed extension of Rolling Hills Road does not occur. These improvements would provide a slightly smaller reduction in delay and queuing during peak periods, compared to Option A, but result in fewer impacts to adjacent lands. This option would exceed the OHP target with a v/c of 0.84 and require a design exception.

Concept 11, Option C assumes that the proposed extension of Rolling Hills Road does occur. This option would provide the greatest reduction in delay and queuing during peak periods, but result in substantial impacts to adjacent lands. This is the only option that would meet the OHP mobility target, with a v/c ratio of 0.78.

Concept 11, Option D assumes that the proposed extension of Rolling Hills Road does occur. This option would provide a slightly smaller reduction in delay and queuing during peak periods, compared to Option C, but result in the smallest impacts amongst all of the options. This option would exceed the OHP target with a v/c of 0.86 and require a design exception.

Note: The v/c ratios presented for this traffic analysis were calculated using a forecasting model based on a 2.0 percent annual growth rate for the City of Roseburg. With the updated forecast based on a 1.2 percent annual growth rate, it was determined that only two improvements would be necessary. The conversion of the westbound right-turn lane to a westbound through-right lane would result in an overall intersection v/c ratio of 0.84 (based on the 1.2 percent annual growth). Combined with a second southbound left-turn lane, the overall intersection v/c ratio is estimated at 0.80 (based on the 1.2 percent annual growth).

Concept 11 – Basic Roadway Geometries and Right-of-Way Requirements

Concept 11, Option A would involve significant ROW impacts. OR 42 would be widened both sides OR 42to add dual left-turn lanes on both legs with paved shoulders but could be accommodated within existing ROW. All widening on Carnes Road and Roberts Creek Road would occur on the east side to minimize property impacts, but would still involve ROW impacts for parcels in northeast and southeast quadrants. Carnes Road would require two additional lanes: one to add the second southbound left turn lane and the other to provide additional receiving lane for the dual eastbound left-turn movement. Roberts Creek Road would require one additional receiving lane for the dual westbound left-turn movement. Additional receiving lanes would need to extend approximately 700 feet to the north, and 600 feet to the south to accommodate lane drops. New 6 foot sidewalks would be included on the east side of Carnes Road and Roberts Creek Road.

Concept 11, Option B would also involve significant ROW impacts. OR 42 would be widened both sides OR 42to add dual left-turn lanes on both legs with paved shoulders but could be accommodated within existing ROW. All widening on Carnes Road and Roberts Creek Road would occur on the east side to minimize property impacts, but would still involve ROW impacts for parcels in northeast and southeast quadrants. Carnes road would require one additional lane to facilitate an additional receiving lane for the dual eastbound left-turn movement. Roberts Creek Road would require one additional receiving lane for the dual westbound left-turn movement. The receiving lane on Carnes Road would extend approximately 700 feet to the north to accommodate a lane drop while the lane on Roberts Creek Road would extend approximately 600 feet. New 6 foot sidewalks would be included on the east side of Carnes Road and Roberts Creek Road.

Concept 11, Option C would involve ROW impacts in the northeast quadrant to add dual southbound lefts on Carnes Road. All widening on Carnes Road would occur on the east side to minimize property impacts. The turn lane on Carnes Road would extend approximately 700 feet to the north to accommodate standard storage and tapers. New 6 foot sidewalks would be included on the east side of Carnes Road. Improvements along OR42 would include extending an additional westbound through lane 1200 feet west of the intersection to allow for typical lane reduction, with 720 feet of taper, matching into the existing alignment west of Landers Ave. This could be accommodated within existing ROW.

Concept 11, Option D would involve ROW impacts in the northeast quadrant to add dual southbound lefts on Carnes Road. All widening on Carnes Road would occur on the east side to minimize property impacts. The turn lane on Carnes Road would extend approximately 700 feet to the north to accommodate standard storage and tapers. New 6 foot sidewalks would be included on the east side of Carnes Road.

Concept 11 – Environmental and Land Use Assessment

This concept would involve property impacts for each of the proposed options, and only Option B would avoid impacts to existing structures. There are no environmental impacts associated with this concept.

Concept 11 – Cost Opinions

Concept 11, Option A improvements are estimated at $3.1 million.

Concept 11, Option B improvements are estimated at $2.8 million.

Concept 11, Option C improvements are estimated at $2.1 million.

Concept 11, Option D improvements are estimated at $1.3 million.

These estimates do not include ROW impacts.

5.5.7. Concept 12 – OR 99/Grant Smith Road Intersection Improvements

The signalized intersection of OR 42 with OR 99/Grant Smith Road is currently exceeding ODOT's mobility targets for an expressway outside of an urban area and the intersection has moderate delays and queuing during peak commuting periods. As volumes continue to grow both on the expressway and the intersecting roads, operations are expected to deteriorate to a condition where demand at the intersection will be near capacity. Many traffic movements would experience long delays with substantial queuing in all turn lanes. Many vehicles waiting to make a left turn or continue through the intersection would have to wait multiple green cycles to get through the intersection.

Concept 12 would improve the intersection operations by adding capacity with a second eastbound left-turn lane. This concept would require a design exception to the HDM standard but would not need an alternative mobility standard to the OHP target.

Concept 12 – Traffic Operations and Safety

Current traffic demand along OR 42 at this intersection is approximately 20,000 vpd, with a higher 2035 forecast demand of approximately 29,000 vpd. The total daily entering volumes, including OR 99 and Grant Smith Road, is approximately 28,000 vpd, with a 2035 forecast demand of 38,000 vpd.

This intersection has the second highest number of reported collisions (44) and crash rate (0.75 crashes/mev) within the study area in the six-year analysis period. One of these crashes involved a fatality, and 24 involved injuries. Nine of the reported crashes were turning or angle related, and 31 were rear end related.

This concept would provide protected left turns where they are currently permitted, on the northbound and southbound approaches. This modification would reduce the potential for turning and angle collisions, which are crash types that typically involve injuries.

This option would provide a reduction in delay and queuing during peak periods, but would not meet the HDM mobility standard. It would meet the OHP target with a v/c ratio of 0.80 and would require a design exception.

Note: The v/c ratios presented for this traffic analysis were calculated using a forecasting model based on a 2.0 percent annual growth rate for the City of Roseburg. With the updated forecast based on a 1.2 percent annual growth rate, the addition of a second eastbound left-turn lane is estimated to have a forecast v/c ratio of 0.71 (based on the 1.2 percent annual growth).

Concept 12 – Basic Roadway Geometries and Right-of-Way Requirements

This concept would involve ROW impacts in the northwest, northeast, and southwest quadrants to facilitate widening of OR 42 to facilitate the dual left turn lanes and along OR 99 to allow for an additional receiving lane. Widening could occur on each side of both facilities to minimize impacts.

Concept 12 – Environmental and Land Use Assessment

This concept would potentially impact property in the northwest, northeast, and southwest quadrants of the intersection, but would not impact existing structures.

Concept 12 – Cost Opinions

The estimated cost of Concept 12 is approximately $1.0 million.

5.6. Network Connectivity and Access Control

Six potential network connectivity and access control improvements were identified during the concept development process to provide improved access for local traffic, facilitate access control along OR 42, and improve safety. A brief summary of the concepts are presented in Table 5-3 with concept locations identified in Figure 5-3. The following sections discuss in detail potential changes and improvements that are specific to network connectivity.

Table 5-3. Network Connectivity and Access Control

ID	Location	General Description	Purpose	Category
13	Rolling Hills (MP 74.77)	Extend Rolling Hills Road to connect with Happy Valley Road	Improved connectivity	Connectivity/ Operations
14	Emils Way/Grange Road (MP 75.53)	Reduce turning conflicts	Enhance safety for all users	Safety
15	Grange Road Extension to the South/East (MP 75.53)	Create new road connection from the east end of Grange Road to provide alternative access to OR 42	Provide alternative access to facilitate access management along OR 42	Safety/ Access Management

Table 5-3. Network Connectivity and Access Control

ID	Location	General Description	Purpose	Category
16	Between Rolling Hills Road and Landers Avenue (MP 74.77-75.53)	Improve local connectivity and modify access to OR 42 from Rolling Hills Road to Landers Avenue	Improved connectivity and alternative access	Safety/ Access Management
17	Winery Lane (MP 76.07-76.22)	Control access at Winery Lane	Provide alternative access to facilitate access management along OR 42	Safety/ Access Management
18	Lookingglass Road to Grant Smith Road (MP 73.88-76.22)	Install U-turn opportunities at key locations	Supplement intersection closures and right-in/right-out only movements	Operations/ Safety

5.6.1. Concept 13 – Extend Rolling Hills Road to Happy Valley Road

Currently, Rolling Hills Road connects with OR 42 and Happy Valley Road but is missing a section, approximately one-half mile long that prevents continuous travel the full length of the roadway. Without this connection, traffic in some of the neighborhoods currently served by Rolling Hills Road must use OR 42 to travel into Roseburg or Winston.

Concept 13 would extend Rolling Hills Road northward to Happy Valley Road as identified in the Douglas County TSP. This link would serve local traffic, as well as relieve demand on parallel routes. This concept should be ultimately considered in conjunction with Concept 7, signalization of the Rolling Hills Road intersection with OR 42.

Concept 13 – Traffic Operations and Safety

The Rolling Hills Road extension would potentially shift up to 200 eastbound left turns during the peak hour from Carnes Road to Rolling Hills Road in the forecast year of 2035. This shift would provide significant operational benefits at Carnes Road, which is currently capacity constrained and in need of improvements. The current side-street demand from Rolling Hills is approximately 500 vpd, with a significantly higher forecast volume of nearly 5,000 vpd assuming that Rolling Hills Road connects to Happy Valley Road. With higher demand on Rolling Hills Road, a traffic signal at OR 42 (see Concept 7) will be necessary to facilitate turning movements to and from the highway.

There were 16 reported crashes at the OR 42/Rolling Hills Road intersection in the 6-year study period. Three of these crashes resulted in fatal and/or serious injuries. Additional traffic on Rolling Hills Road may increase the severe crash rate at this intersection without alternative traffic control, such as a signal. While a signal may result in more rear-end collisions, it would mitigate the more severe turning and angle collisions that currently occur and would likely worsen with more side street traffic demand on Rolling Hills Road.

Concept 13 – Basic Roadway Geometries and Right-of-Way Requirements

The proposed Rolling Hills Road extension would require approximately 2,400 feet of additional roadway primarily outside of existing ROW. The cross section of Rolling Hills Road would include a 42-foot paved roadway with 6 foot sidewalks.

Concept 13 – Environmental and Land Use Assessment

This concept would involve property impacts, but could avoid impacts to existing structures depending upon the chosen alignment. There are no environmental impacts associated with this improvement.

Concept 13 – Cost Opinions

The cost for this concept is estimated at $3.5 million, not including ROW.

5.6.2. Concept 14 – Grange Road/Emils Way – Reduce Turning Conflicts

Twelve crashes occurred near the OR 42/Grange Road/Emils Way intersection within a 6-year analysis period, including some fatalities. Most of these crashes were related to turning movements to and from Grange Road/Emils Way.

Concept 14 considers restricting allowable turn movements at this intersection in order to reduce the number of conflicts and resulting crashes at the intersection. Two options were considered:

- **Option A**: Restrict traffic movements turning from Grange Road and Emils Way to right turn onto OR 42 but allow both right and left turns from OR 42 onto the side streets.
- **Option B**: Restrict traffic movements turning to and from Grange Road and Emils Way to right turns only.

This concept should be ultimately considered in conjunction with Concept 15, an extension of Grange Road to provide alternative access to Roberts Creek Road.

Concept 14 – Traffic Operations and Safety

Twelve crashes were reported during the 6-year analysis period; most were turning collisions. Reducing the number of conflict points would reduce the overall collision potential at this unsignalized location.

Concept 14, Option A would reduce delays and queues on Grange Road and Emils Way by eliminating the left-turn movement onto OR 42. Although this option would eliminate some of the turning conflicts that have shown consistent crash patterns, it would not eliminate the conflict with the westbound left-turn movement from OR 42 onto Grange Road/Emils Way, which has resulted in 4 of the 9 turning collisions in the 6-year analysis period.

Option A would still allow ingress to local businesses, but would require some egress to use alternative routing. From Grange Road, vehicles that want to turn left onto OR 42 could travel

down Grange Road to Rolling Hills Road to access OR 42. From Emils Way, vehicles would have no option but to turn right onto OR 42 and then turn around using other local roads or possibly executing a U-turn (see Concept 18).

Concept 14, Option B would reduce delays and queues on Grange Road and Emils Way by eliminating the left-turn movement to and from OR 42. This option would eliminate the conflict between the westbound left-turn movement onto Grange Road and eastbound traffic on OR 42. This conflict resulted in 5 turning collisions, including one fatal collision.

Option B would still allow some ingress and egress to/from local businesses, but would require alternative routing for all vehicles turning left. Without additional roadway connections, this option would have far greater impacts on traffic circulation than Option A. In addition to the routing options discussed in Option A for vehicles turning left from the side streets, left-turning vehicles from OR 42 would need to travel a significant way out of direction or look for U-turn options (see Concept 18).

The traffic circulation impacts described for both options could be partially mitigated by an extension of Grange Road to provide alternative access to Roberts Creek Road, which would allow access to and from the businesses on the south side of the highway.

Concept 14 – Basic Roadway Geometries and Right-of-Way Requirements

Currently all movements are allowed at the intersection of OR 42 and Grange Road/Emils Way. A raised median would need to be installed in the existing painted median, to restrict the turning movements for either Option A or B. With Option A, minor roadway widening within the existing ROW may be needed to add the raised median with the left-turn lanes from OR 42. With Option B, the raised median could be installed within the existing painted median and no widening would be necessary. There would be no direct impacts to adjacent properties.

Concept 14 – Environmental and Land Use Assessment

There would be no direct impacts to adjacent properties, although drainage relocation would need to occur due to roadway widening. There are no environmental impacts associated with this concept.

Restricting turn movements to Grange Road would impact the businesses on the south side of the highway. The extent of the impacts would depend on whether Option A or Option B is implemented and whether the turn restrictions are paired with additional roadway connections (Concept 15) and/or U-turns (Concept 18).

Restricting turn movements to Emils Way would have a lesser impact on the residences north of the highway but drivers would have be inconvenienced by the restrictions and would have to travel further. The extent of the inconvenience would depend on whether Option A or Option B is implemented and whether the turn restrictions are paired with U-turns (Concept 18). These impacts could raise environmental justice concerns about effects on Title VI populations

Concept 14 – Cost Opinions

The estimated cost of Concept 14 is approximately $1.3 million for the median and drainage relocation associated with Option A, and $300,000 for the reduced improvements associated with Option B. This estimate does not include utility relocation.

5.6.3. Concept 15 – Extend Grange Road East to Roberts Creek Road

Currently, Grange Road has connections with OR 42 across from Rolling Hills Road and Emils Way, and terminates on the east end at a commercial/retail development. The unsignalized connection with OR 42 across from Emils Way experiences significant delays during peak periods and has had numerous turning-related crashes in recent years.

Concept 15 would extend Grange Road to tie in with Roberts Creek Road to provide access to a signalized connection with OR 42, facilitate access management along OR 42, and improve safety. Two options have been developed:

- **Option A**: Create a new roadway connection from the east end of Grange Road to tie in with Brittney Avenue.
- **Option B**: Create a new roadway connection from the east end of Grange road to Roberts Creek Road to create a 4-way intersection with Tannhauser Avenue.

Concept 15 – Traffic Operations and Safety

Although current traffic demand along most of Grange Road is fairly low, the demand at the intersection with OR 42 is quite high (almost 3,000 vpd) because of the high business activity immediately to the north. Either option for the Grange Road extension would allow vehicles to shift east to Roberts Creek Road to gain access to a signalized connection with OR 42; moreover, this would provide alternative ingress/egress for businesses on the south side of the highway with or without access restrictions. The new connection would have bicycle and pedestrian facilities to improve mobility for all modes.

Concept 15, Option A would provide the new connection between Grange Road and Roberts Creek Road via Brittney Avenue. This option would add more traffic to Brittney Road, a local residential street that also serves a school. The extent of the traffic increase would depend on the extent of the access restrictions discussed under Concept 14. This option would be longer than Option B and would involve out-of-direction travel for users.

Concept 15, Option B would provide a more direct connection between Grange Road and Roberts Creek Road. This new roadway would not impact the nearby residences by adding traffic to local streets. The connection to Roberts Creek Road opposite Tannhauser Road would still be more than 500 feet from the signal at OR 42, which would allow adequate storage at the traffic signal so that queues would not block the new connection.

Concept 15 – Basic Roadway Geometries and Right-of-Way Requirements

The proposed Grange Road extension would include 12 foot travel lanes, 8 foot shoulders, and 6 foot sidewalks. Both of these extensions would require additional ROW. Both options include drainage and illumination.

Concept 15, Option A Would include approximately 1,200 feet of reconfigured and new roadway, of which a significant portion would use existing but unimproved ROW that stretches westerly from Brittany Avenue to Grange Road. Additional ROW would still be required.

Concept 15, Option B Would include approximately 1,600 feet of reconfigured or new roadway primarily outside of the existing ROW.

Concept 15 – Environmental and Land Use Assessment

Concept 15, Option A Would have no impacts to existing structures but would re-route traffic to Brittney Avenue which is immediately adjacent to a school. There are no environmental impacts associated with this concept.

Concept 15, Option B Would include impacts to an existing structure, but would be in agreement with long-term Douglas County plans. There are no environmental impacts associated with this concept.

Concept 15 – Cost Opinions

Concept 15, Option A improvements are estimated at $2.1 million. This estimate does not include ROW impacts.

Concept 15, Option B improvements are estimated at $2.5 million. This estimate does not include ROW impacts.

5.6.4. Concept 16 – Improve Local Connectivity and Restrict Access to OR 42

Currently, public and private access along OR 42 between Rolling Hills Road and Landers Avenue is unrestricted because there is no frontage road or alternative access available. However, there have been numerous (7) crashes along this section of the expressway associated with these roadway and access points.

Concept 16 would provide improved local connectivity for east-west and north-south travel paired with access restrictions on OR 42. This concept includes connecting Melody Lane with Stella Street, Depriest Street, and Circle Drive. In addition, a frontage road or alternative access would be provided to connect with Rolling Hills Road for any current facilities that access OR 42 in this segment. Some of these improvements are included in a STIP project (Key no. 15006) that would signalize the intersection of Rolling Hills Road and create a frontage road between Rolling Hills Road and Jackie Avenue.

With the enhanced local street network, access management along the OR 42 corridor would include closing some private and public access points and restricting movements to right turns only at other locations. Access restrictions could be implemented incrementally or as part of a single projects.

Concept 16 – Traffic Operations and Safety

Current traffic demand along OR 42 in the vicinity of these roadway connections is approximately 17,000 vpd, with a higher 2035 forecast demand of approximately 25,000 vpd. There were 7 crashes reported in the segment between Rolling Hills Road and Landers Avenue and 7 crashes reported at Landers Avenue. Providing improved local connectivity would improve safety along the expressway by directing turning vehicles to targeted and signalized locations where they can be accommodated with a lesser crash risk.

Concept 16 – Basic Roadway Geometries and Right-of-Way Requirements

The proposed local connections would meet Douglas County local road standards. Additional ROW would be required. Some of these connections have been shown in approved development plans but have not yet been constructed.

Concept 16 – Environmental and Land Use Assessment

Depending on chosen alignments, there may be some impacts to existing residential structures in the area. Traffic volumes on some residential roadways may increase while they decrease on others as a result of changes in traffic circulation.

There are no environmental impacts associated with this concept.

Concept 16 – Cost Opinions

Costs associated with this improvement would be dependent upon the alignments chosen.

5.6.5. Concept 17 – Control Access at Winery Lane

Currently, Winery Lane has direct and full access to OR 42 that does not currently meet expressway access spacing standards. There were 6 crashes on OR 42 in the vicinity of Winery Lane. Some of these collisions are associated with Winery Lane itself although others may be related to positioning and lane changes associated with the OR 99/Grant Smith intersection with OR 42 and traffic to and from the freeway.

Concept 17 considers two access options at Winery Lane that support the effort to upgrade OR 42 to expressway standards:

- **Option A**: Create a new connection to Grant Smith Road and close all access to OR 42.
- **Option B**: Limit access at OR 42 to right-in right-out and provide U-turn opportunities.

Concept 17 – Traffic Operations and Safety

Current traffic demand along Winery Lane is very low, as this acts as a private driveway to several properties.

Concept 17, Option A would divert Winery Lane traffic to Grant Smith Road and the signalized intersection with OR 42. Because the traffic volumes on Winery Lane are so low, the diverted traffic would have no measurable impact on intersection operations. The closure of Winery Lane would eliminate the potential for crashes associated with the unsignalized intersection access.

Concept 17, Option B would convert all turning movements to and from Winery Lane to right turns only. Westbound vehicles that wished to access Winery Lane would need to turn around at the Carnes Road/Roberts Creek Road intersection and return eastbound to Winery Lane. Vehicles that wished to travel westbound on OR 42 from Winery Lane would need to turn eastbound onto OR 42 then turn around at the OR 99/Grant Smith Road intersection. Local drivers may also choose alternative routes rather than making U-turns on OR 42.

Concept 17 – Basic Roadway Geometries and Right-of-Way Requirements

Concept 17, Option A would include a Winery Lane connection that would meet Douglas County local road standards, which includes 11 foot paved travel lanes and 3 foot shoulders. This facility would require additional ROW.

Concept 17, Option B would include a raised median that could be installed within the existing painted median and no widening would be necessary. There would be no direct impacts to adjacent properties.

Concept 17 – Environmental and Land Use Assessment

With Option A, additional right of way would be required from adjacent property owners but there are no structures that would be impacted. Construction of this private connection could be coordinated with access to the vacant parcels on the south side of Grant Smith Road. There would be no environmental impacts associated with this concept.

With Option B, drivers would be inconvenienced by the turn restrictions and would have to travel further. The extent of the inconvenience would depend on local routing options and if the turn restrictions are paired with U-turns (Concept 18).

Concept 17 – Cost Opinions

Concept 17, Option A improvements are estimated at $600,000. This estimate does not include ROW impacts.

Concept 15, Option B improvements are estimated at $100,000 with ROW impacts anticipated.

5.6.6. Concept 18 – Provide U-Turn Opportunities at Key Locations along OR 42

OR 42 currently has few turning movement restrictions, in part because there are limited local network options for some roadways. At locations where access may be restricted, there are two key ways of maintaining all movements. Alternative access can be provided via local roads or left turns from side-streets can be replaced with right turns, with a U-turn opportunity on the mainline roadway. For the access points which maintain right-in, right-out movements, U-turn opportunities are a simple way to safety accommodate passenger vehicles.

Concept 18 would provide both midblock unsignalized and signalized U-turn opportunities to compliment access control measures. Local roads could provide alternative access to heavy vehicles that cannot make U turns because of large turning radius characteristics.

Concept 18 – Traffic Operations and Safety

Turning or angle related crashes are the primary crash types that are prevented by access management that converts direct left turns to right turns with a U-turn. In fact, providing U-turns instead of direct left turns can reduce the frequency of all crashes by approximately 20 percent. As a result of the proposed modifications, delay will increase slightly for left-turns from side-streets as a result of out-of-direction travel.

Concept 18 – Basic Roadway Geometries and Right-of-Way Requirements

Raised concrete medians or paint can be used to demarcate U-turn locations within the existing medians and ROW.

Concept 18 – Environmental and Land Use Assessment

This concept would not have environmental or land use impacts.

Concept 18 – Cost Opinions

U-turn improvements are estimated at $100,000 per location, assuming raised concrete medians are chosen.

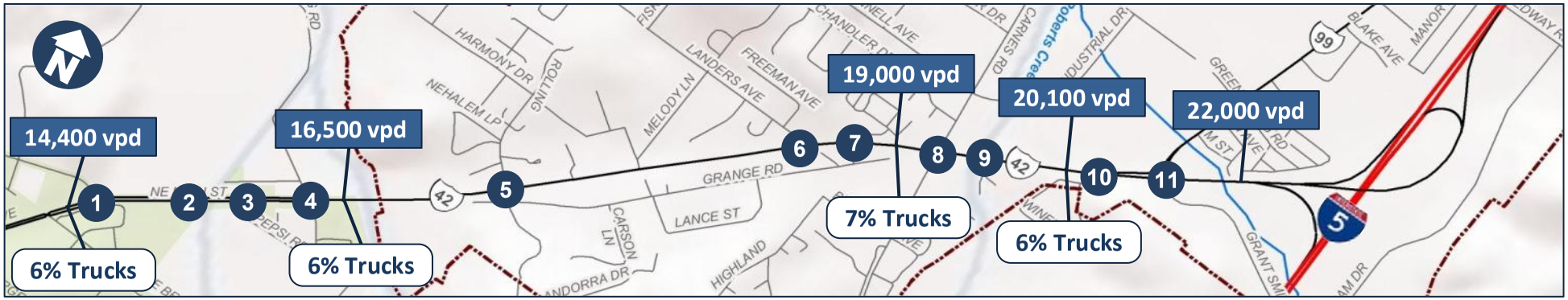
5.7. Recommendations

This memorandum presents the concepts as they were originally developed and presented to the Technical and Citizen Advisory Committees as well as a public open house. The projects included in the final EMP reflect input from those committees and direction received from ODOT.

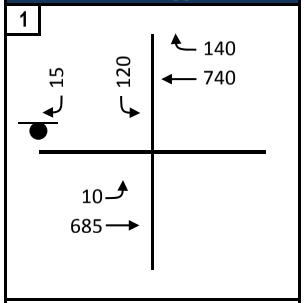
Attachments:

Figure 5-1. Existing 2011 Design Hour Traffic Volumes
Figure 5-2. Future Baseline 2035 Design Hour Traffic Volumes
Figure 5-3. Concept Locations

Summary Evaluation Matrix



OR 42 @ Lookingglass Road (1)



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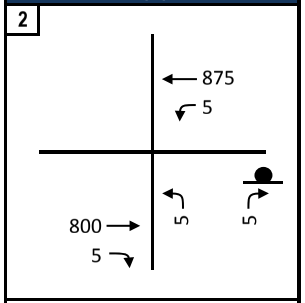

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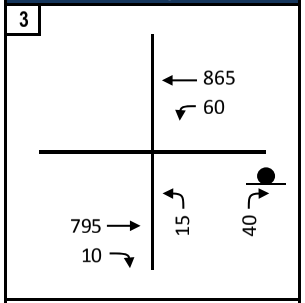

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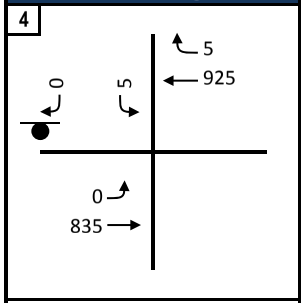

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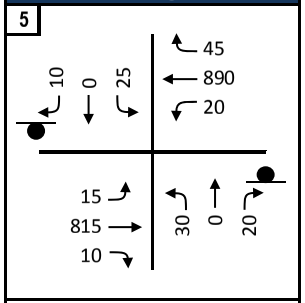
OR 42 @ Rolling Hills Road (5)



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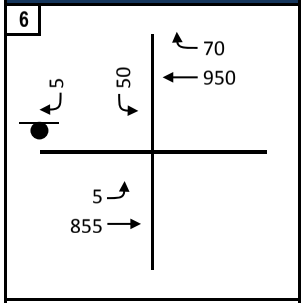
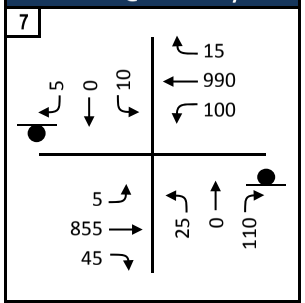


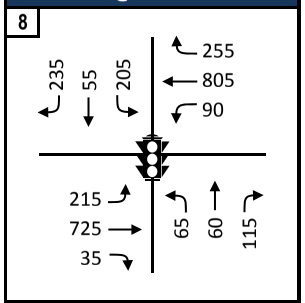
TEV = 1935

OR 42 @ Emils Way (7)



TEV = 2160

OR 42 @ Carnes Road (8)



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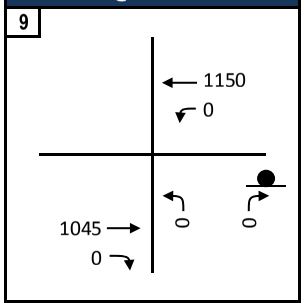
OR 42 @ Art Mill Lane (9)



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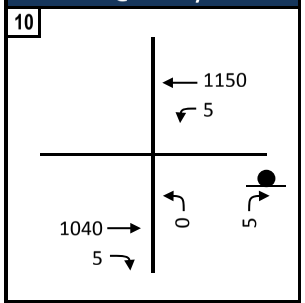
OR 42 @ Winery Lane (10)



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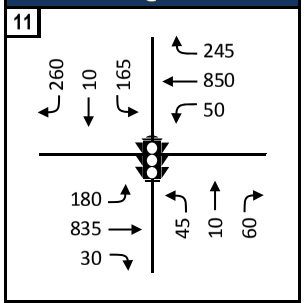
OR 42 @ OR 99 (11)



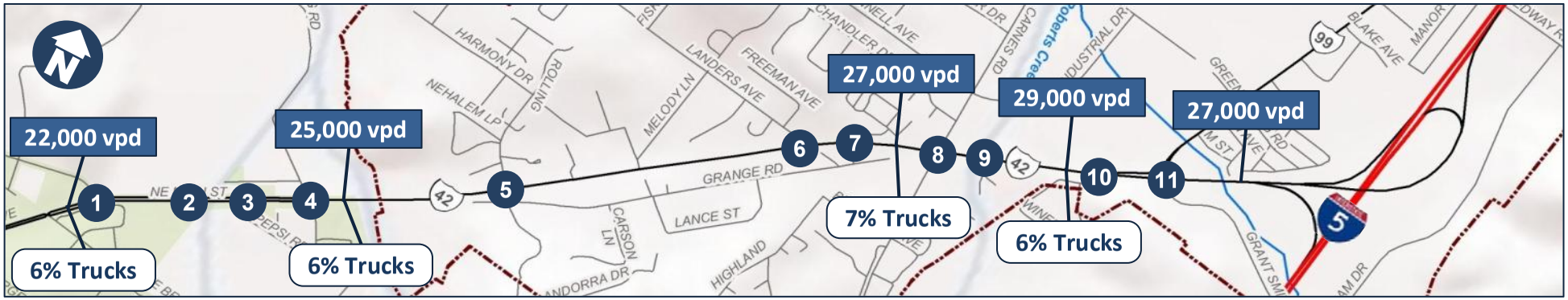
TEV = 2740

OR 42 Expressway Management Plan

Legend

- Turning Movement
- ### PM Peak Hour Volume
- TEV: Total Entering Volume
- Signalized Intersection
- STOP-Controlled
- # Intersection Number
- #,### vpd — 2011 Average Daily Traffic Volume (vehicles per day)
- #% Trucks — Truck Percentage of Total Trafffic (Single Unit and Semi-Trailer)

Figure 5-1
Existing (2011)
Design Hour Traffic Volumes



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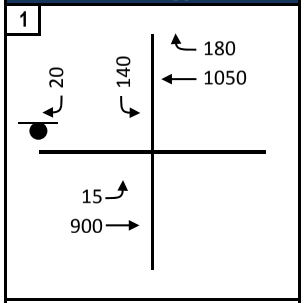
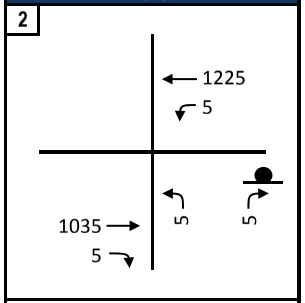


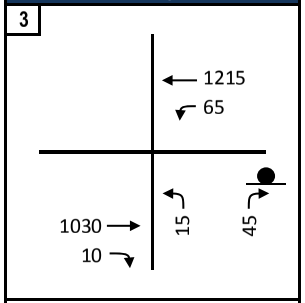
TEV = 2305

OR 42 @ Umpqua Safari RV (2)



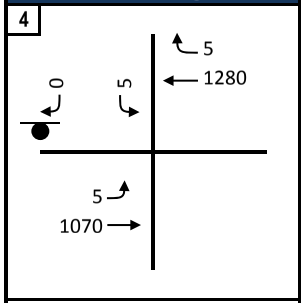
TEV = 2280

OR 42 @ Pepsi Road (3)



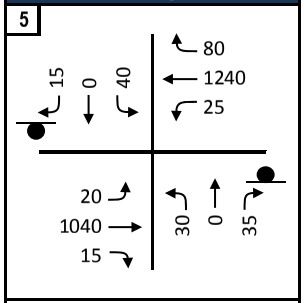
TEV = 2380

OR 42 @ Helweg Road (4)



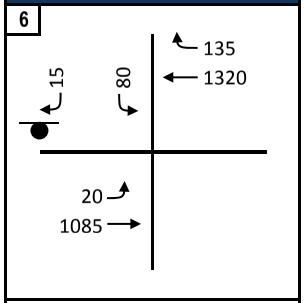
TEV = 2365

OR 42 @ Rolling Hills Road (5)



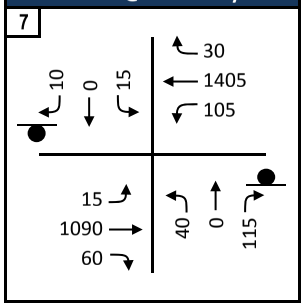
TEV = 2540

OR 42 @ Landers Avenue (6)



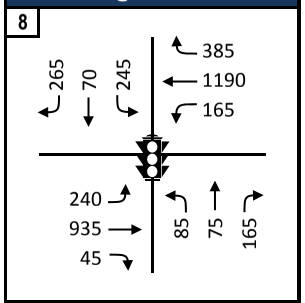
TEV = 2655

OR 42 @ Emils Way (7)



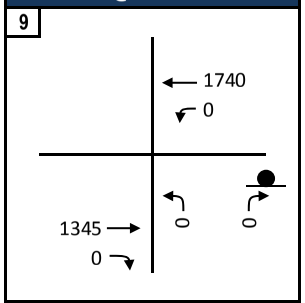
TEV = 2885

OR 42 @ Carnes Road (8)



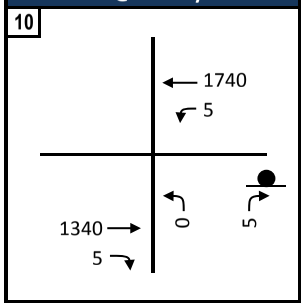
TEV = 3865

OR 42 @ Art Mill Lane (9)



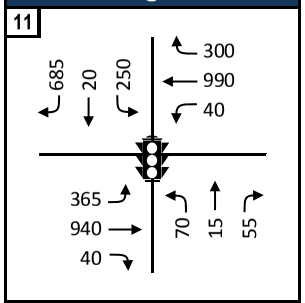
TEV = 3085

OR 42 @ Winery Lane (10)



TEV = 3095

OR 42 @ OR 99 (11)



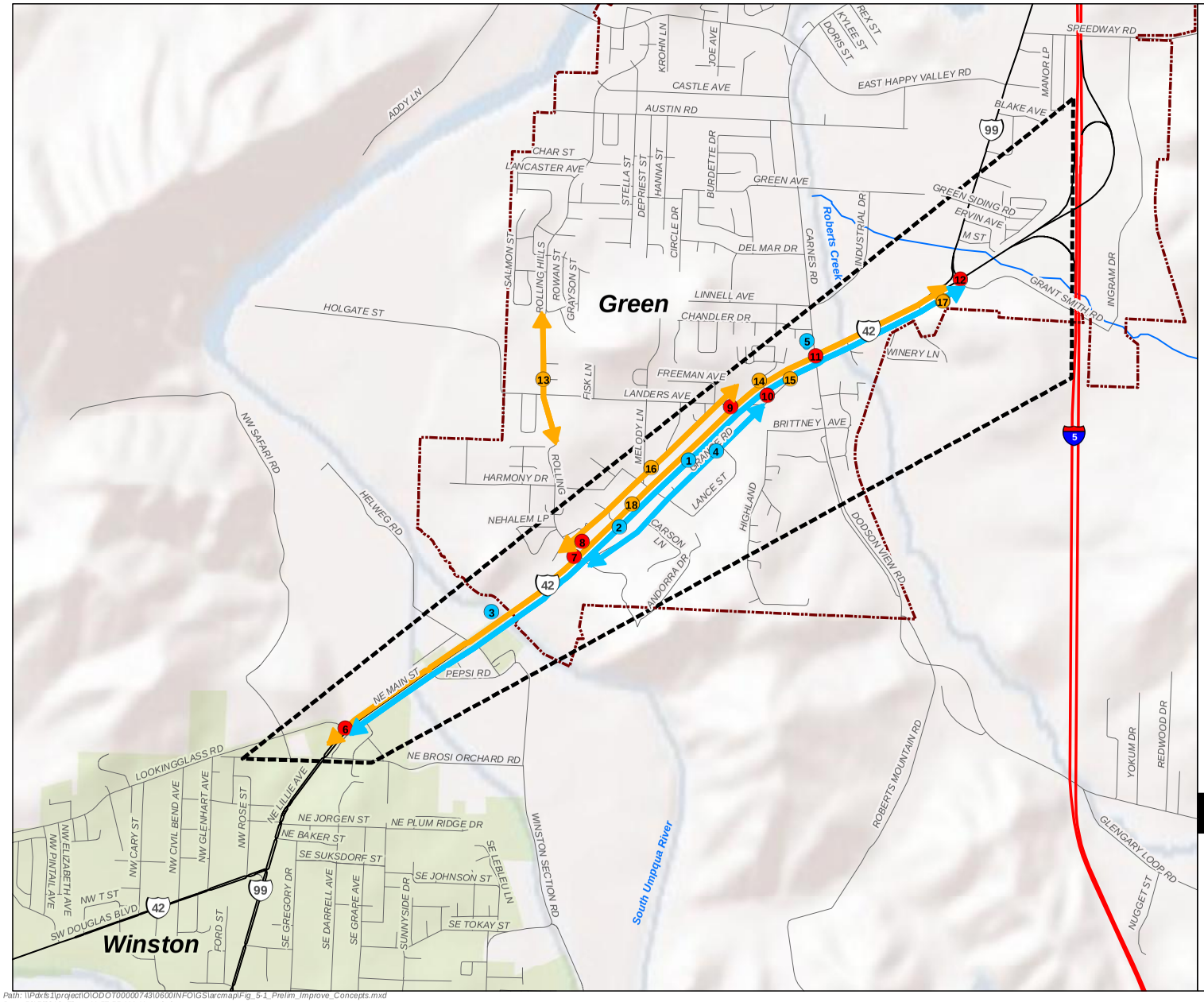
TEV = 3770

OR 42 Expressway Management Plan

Legend

- Turning Movement
- ### PM Peak Hour Volume
- TEV: Total Entering Volume
- Signalized Intersection
- STOP-Controlled
- # Intersection Number
- #,### vpd — 2035 Average Daily Traffic Volume (vehicles per day)
- #% Trucks — Truck Percentage of Total Trafffic (Single Unit and Semi-Trailer)

Figure 5-2
Future Baseline (2035)
Design Hour Traffic Volumes



Legend

- Study Area
- City of Green UUA Boundary
- Winston City Limits
- Roads
- Rivers

Types of Improvements

- # Multi-Modal
- # Intersection
- # Connectivity and Access Control

N

0 1,600 3,200
Feet

OR 42 Expressway Management Plan

Figure 5-3
Preliminary Concept ***Locations***

Data Sources:
Douglas County, Oregon 2011
ESRI, 2011
Oregon Department of Transportation (ODOT), 2009
Oregon Geospatial Enterprise Office (GEO), 2009
U.S. Census Bureau, 2010

Path: \\Pdxfs1\projectIO\ODOT00000743\0600INFO\GS\arcmap\Fig_5-1_Prelim_Improve_Concepts.mxd
Date: 5/15/2012 Time: 11:57:55 AM User: kskr

OR 42 Improvement Concepts – Summary Evaluation Matrix

ID	Location	General Description	Purpose	Traffic Operations and Safety[1,2,3]	Basic Roadway Geometry and Right of Way[4]	Environmental and Land Use[5]	Cost Opinion[6]
Multi-Modal Improvement Concepts							
1	Lookingglass Rd to OR 99/Grant Smith Rd (MP 73.88-76.22)	Enhance bicycle and pedestrian facilities along the south side of OR 42 Option A: ▪ Stripe an eastbound bike lane on south side of the Roadway ▪ Provide a buffered sidewalk for pedestrians Option B: ▪ Provide two-way, multi-use path with buffer from expressway traffic	Provide facilities along OR 42 for all modes of travel	▪ Current ADT: 15,000 to 23,000 vpd ▪ Forecast ADT: 22,000 to 29,000 vpd Option A: ▪ Buffered sidewalks improve safety of pedestrians ▪ Bike lanes provide clearly defined travel way for bicyclists ▪ Reduces need for pedestrians and bicyclist to cross the highway to access the multi-use path on north side Option B: ▪ Buffered multi-use path improve safety of pedestrians ▪ Bicyclist are also separated from traffic providing greater safety improvement than Option A ▪ Consistent with the Oregon Bicycle and Pedestrian Design Guidelines recommendations, and would increase safety for vulnerable users	▪ Both options could be within the available ROW ▪ Both options would include illumination for the new facilities along the south side of OR 42 Option A: ▪ Includes 8' right shoulder, 6' buffer, a 6' landscape buffer, and a 6' sidewalk ▪ Drainage improvements ▪ Assumes no retaining walls would be required Option B: ▪ Includes 10' multi-use path with 5' buffer ▪ Assumes that no retaining walls would be required	▪ South Umpqua River is riparian corridor with aquatic habitat, wildlife habitat, and wetlands ▪ Impacts to wetlands should be avoided; mitigation and permitting will be necessary if impacts cannot be avoided ▪ Fill in the the South Umpqua floodways and floodplains should be avoided.	Option A: ▪ $5.5 Million ▪ Does not include costs for widening bridges or lengthening culverts Option B: ▪ $3.8 Million ▪ Does not include costs for widening bridges or lengthening culverts
2	Lookingglass Rd to OR 99/Grant Smith Rd (MP 73.88-76.22)	Install Roadway lighting at key locations	Enhance visibility and safety in the corridor	▪ Current ADT: 15,000 to 23,000 vpd ▪ Forecast ADT: 22,000 to 29,000 vpd ▪ Improved safety and security for all modes ▪ Improved visibility for bicyclists on Roadway, pedestrians on sidewalks and crossing Roadways, and at transit stops	▪ Improvements included in this concept would occur within the available right of way (ROW).	▪ There are not any anticipated environmental or land use impacts associated with the proposed lighting improvements. ▪ Lighting spillover and skyglow may reach adjacent properties.	▪ Specific costs are dependent on number of locations identified and will be determined as the preferred concept is identified
3	Winston Section Rd (MP 74.34)	Connect Winston Section Rd to the multi-use path on the north side of OR 42 with a multi-use path undercrossing near the South Umpqua River (under bridge)	Provide a safe route for bicyclists and pedestrians to cross OR 42	▪ Current ADT: 17,100 vpd ▪ Forecast ADT: 25,000 vpd ▪ Undercrossing minimizes likelihood that pedestrians and bicycles will cross OR 42 at uncontrolled at-grade locations ▪ Improves safety for vulnerable users, and increase the attractiveness of alternative travel modes ▪ Undercrossing users would have some out-of-direction travel to connect between the multi-use path and Winston Section Rd ▪ Would connect to bicycle and pedestrian facilities on the south side of OR 42 if constructed with Concept 1	▪ Proposed pathway and undercrossing can be constructed within the existing ROW ▪ Pathway would be approximately 1,000' long, with a typical width of 10' ▪ Minimal excavation would be required because of the existing terrain	▪ South Umpqua River is riparian corridor with aquatic habitat, wildlife habitat, and wetlands ▪ Area underneath the bridges is already heavily disturbed by existing unpaved access ▪ Further disturbance would likely be avoidable or minimized ▪ Impacts to wetlands should be avoided; mitigation and permitting will be necessary if impacts cannot be avoided	▪ $450,000
4	Grange Rd (MP 75.53)	Construct sidewalks with curb and gutter along length of Rd	Provide parallel route to OR 42 for bicyclists and pedestrians	▪ Current ADT: 800 vpd ▪ Forecast ADT: 1,300 vpd ▪ Buffered sidewalks improve safety of pedestrians ▪ Reduces need for pedestrians and bicyclist to cross the highway to access the multi-use path on north side ▪ Slower adjacent traffic volumes ▪ Most parcels on the south side of OR 42 take access from Grange Rd ▪ Slight increase in travel distance for through traffic	▪ Currently no pedestrian facilities along Grange Rd ▪ Could be constructed within the available ROW ▪ Includes illumination for the new facilities along Grange Rd ▪ 6' sidewalks included on both sides of the Roadway ▪ Roadway assumed to have shared lanes for bicycles and low-speed vehicles.	▪ Option assumes that drainage would be included with the sidewalk installation. ▪ There are no anticipated environmental or land use impacts.	▪ $5.5 million
5	NW Corner of Carnes Rd (MP 75.72)	Provide a park and ride facility that coordinates with the adjacent bus stop	Improved transit facilities	▪ Would facilitate connections with South County Route 99, Winston Commuter Route, and carpooling. ▪ Access limited to right-in and right-out ▪ Approximately 75 to 125 parking spaces	▪ Could be constructed within the available ROW ▪ Approximately 75 to 125 parking spaces ▪ Access limited to right-in and right-out	▪ No environmental resource impacts ▪ Would require modified use of existing ODOT property	▪ $1.0 million

OR 42 Improvement Concepts – Summary Evaluation Matrix

ID	Location	General Description	Purpose	Traffic Operations and Safety[1,2,3]	Basic Roadway Geometry and Right of Way[4]	Environmental and Land Use[5]	Cost Opinion[6]
Intersection Improvement Concepts							
6	Lookingglass Rd (MP 73.88)	Relocate Lookingglass Rd to connect at 4-way intersection and install traffic signal ▪ Option A: Close current connection and extend Lookingglass Rd east to create a 4-way intersection with Pepsi Rd (MP 74.19). ▪ Option B: Close current connection and extend Lookingglass Rd east to create a 4-way intersection with Umpqua Safari Rd (MP 74.03) with possibility of extending Pepsi Rd west to combine with Umpqua Safari Rd. ▪ Option C: Close current connection of Lookingglass Rd or limit it to right-in only, and realign the Roadway to create a 4-way intersection with Brosi Orchard Rd (MP 73.76).	Improve operations and safety	▪ Current OR 42 ADT: 15,000 vpd ▪ Forecast OR 42 ADT: 22,000 vpd ▪ Current Lookingglass Rd ADT: 3,000 vpd ▪ Forecast Lookingglass Rd ADT: 4,000 vpd ▪ No reported crashes at this intersection Option A: ▪ Reduced delays and improved safety for side-street left turns ▪ Increased delays for mainline through traffic Option B: ▪ Same as Option A Option C: ▪ Same as Option A ▪ Greater increases in delays for mainline through traffic stopping on an uphill grade	Option A ▪ 2,100' additional roadway ▪ Primarily outside of the existing ROW ▪ Would require widening or construction of a box culvert and bridge ▪ Would likely impact two homes on the north side of OR 42 opposite Pepsi Rd Option B ▪ 1,000' of additional roadway north of OR 42 and 1,100' of additional roadway (for the Pepsi Rd extension) south of OR 42 ▪ Similar to Option A, but avoids impacts to homes north of OR 42 opposite Pepsi Rd ▪ Bridge and culvert modifications would be required on the south side of OR 42 Option C ▪ 600' of additional Roadway ▪ Would result in a skewed intersection at OR 42 with a steeper grade than at the current Lookingglass Rd approach.	Option A ▪ Would require widening or construction of a box culvert and bridge ▪ Would likely impact two homes on the north side or OR 42 opposite Pepsi Rd. ▪ Would require acquisition of ROW from lands north of OR 42 ▪ Proximate to riparian corridors, aquatic habitat, wildlife habitat and wetlands near Umpqua River ▪ Would interact with both the floodway and 100 year floodplain. Option B ▪ Similar environmental impacts as Option A ▪ Would not have impacts to existing residential structures but would require acquisition of ROW for both the Lookingglass and Pepsi Rd extensions. Option C ▪ Would require acquisition of ROW from landowners between Lookingglass Rd and OR 42. ▪ Would include impacts to an existing structure ▪ Alignment would not have environmental impacts.	▪ All estimates include cost of traffic signal ▪ No estimates include ROW costs Option A ▪ $6.0 million ▪ Includes costs for bridge and culvert improvements Option B ▪ $6.0 million ▪ Includes costs for bridge and culvert improvements Option C ▪ $1.5 million
7	Rolling Hills Rd (MP 74.77)	Signalize intersection (Should be considered in conjunction with Concepts 13, 14, and 16)	Improve operations and safety	▪ Current OR 42 ADT: 19,000 vpd ▪ Forecast OR 42 ADT: 27,000 vpd ▪ Current Rolling Hills Rd ADT: 500 vpd ▪ Forecast Rolling Hills Rd ADT with extension to Happy Valley Rd: 5,000 vpd ▪ 15 crashes reported at Rolling Hills Rd intersection ▪ Preliminary signal warrants are not currently met ▪ Warrants would likely be met with Rolling Hills extension and other local connectivity improvements ▪ Reduced delay and improved safety for side-streets ▪ Increased delays for mainline through traffic	▪ Signalization of Rolling Hills Rd can occur within existing ROW ▪ Should be considered with local system enhancements and access control in Concepts 13, 14, and 16	▪ No environmental resource or land use impacts	▪ $500,000 for signal improvements ▪ Local connectivity costs are not included in estimate
8	Rolling Hills (MP 74.77)	Add right-turn deceleration lanes on OR 42 in the eastbound and westbound directions	Address existing safety concerns and decrease delay	▪ Current OR 42 ADT: 19,000 vpd ▪ Forecast OR 42 ADT: 27,000 vpd ▪ Meets turn lane criteria ▪ Improved safety as right-turn deceleration lanes allows deceleration in a lane separated from high-speed through traffic ▪ Some operational benefits with separated right turns	▪ Can be accommodated within existing ROW ▪ Modifies northeast and southwest corners of intersection to provide deceleration lane ▪ Adjacent drainage and multiuse path would need to be shifted to north ▪ Lighting for intersection is included ▪ Existing pavement width is 84'	▪ Adjacent drainage and multiuse path would need to be shifted to north ▪ No land use impacts	▪ $500,000
9	Landers Ave (MP 75.42)	Add right-turn deceleration lane on OR 42 in the westbound direction	Address existing safety concerns and decrease delay	▪ Current ADT: 19,000 vpd ▪ Forecast ADT: 27,000 vpd ▪ One serious injury crash reported involving right turn ▪ Improved safety as right-turn deceleration lanes allows deceleration in a lane separated from high-speed through traffic ▪ Some operational benefits with separated right turns	▪ Can be accommodated within existing ROW ▪ Modifies northeast corner of intersection to provide deceleration lane ▪ Adjacent drainage and multiuse path would need to be shifted to north ▪ Lighting for intersection is included ▪ Existing pavement width is 84'	▪ Adjacent drainage and multiuse path would need to be shifted to north ▪ No land use impacts	▪ $250,000

OR 42 Improvement Concepts – Summary Evaluation Matrix

ID	Location	General Description	Purpose	Traffic Operations and Safety[1,2,3]	Basic Roadway Geometry and Right of Way[4]	Environmental and Land Use[5]	Cost Opinion[6]
10	Emils Way /Grange Rd (MP 75.53)	Add right-turn deceleration lane on OR 42 in the eastbound and westbound directions	Address existing safety concerns and decrease delay	▪ Current OR 42 ADT: 19,000 vpd ▪ Forecast OR 42 ADT: 27,000 vpd ▪ Meets turn lane criteria ▪ Improved safety as right-turn deceleration lanes allows deceleration in a lane separated from high-speed through traffic ▪ Some operational benefits with separated right turns	▪ Can be accommodated within existing ROW ▪ Modified northeast and southwest corners of intersection to provide deceleration lane ▪ Adjacent drainage and multiuse path would need to be shifted to north ▪ Lighting for intersection is included ▪ Existing pavement width is 84'	▪ Adjacent drainage and multiuse path would need to be shifted to north ▪ No land use impacts	▪ $500,000
11	Carnes Rd/Roberts Creek Rd (MP 75.72)	Increase intersection capacity to meet forecast demand ▪ Option A: (without Rolling Hills extension): Install dual left turns on eastbound, westbound, and southbound approaches and modify signals to provide protected left turns on all approaches. ▪ Option B: (without Rolling Hills extension): Install dual left turns for eastbound and westbound approaches, and modify signals to provide protected left turns on all approaches. ▪ Option C: (with Rolling Hills extension): Install dual left turns for southbound approach, convert the westbound right-turn lane into a shared through/right, and modify signals to provide protected left turns on all approaches ▪ Option D: (with Rolling Hills extension): Install dual left turns only for southbound approach and modify signals to provide protected left turns on all approaches.	Improve operations and safety	▪ Current total entering volume: 28,000 vpd ▪ Forecast total entering volume: 40,000 vpd ▪ Top 10% of statewide Safety Priority Index System rankings ▪ 39 crashes during a 6-year study period ▪ Each option would provide protected left turns for all approaches Option A ▪ Assumes no Rolling Hills Rd extension ▪ Would reduce peak hour delay and queuing ▪ Would not meet the HDM mobility standard but would nearly meet the OHP target with a v/c ratio of 0.81. Option B ▪ Assumes no Rolling Hills Rd extension ▪ Would reduce peak hour delay and queuing to a lesser extent compared to Option A ▪ Would exceed the OHP target with a v/c of 0.84 and require a design exception. Option C ▪ Assumes Rolling Hills Rd extension does occur ▪ Would reduce peak hour delay and queuing to greatest extent of all options ▪ Only option that would meet the OHP mobility target, with a v/c ratio of 0.78. Option D ▪ Assumes Rolling Hills Rd extension does occur ▪ Would reduce peak hour delay and queuing to a lesser extent compared to Option C ▪ Would exceed the OHP target with a v/c of 0.86 and require a design exception.	▪ Widening OR 42 would occur on both sides of roadway for left-turn lanes ▪ Widening on Carnes and Roberts Creek Rd would occur on east side to minimize impacts ▪ All options would involve ROW impacts Option A ▪ Widen both sides of OR 42 to add eastbound and westbound dual lefts. ▪ Widen Carnes Rd to add second southbound left-turn lane and add second receiving lane (700') for dual eastbound lefts ▪ Widen Roberts Creek Rd to add second receiving lane (600') for dual westbound lefts ▪ Add 6' sidewalks on east side of Carnes Rd and Roberts Creek Rd. Option B ▪ OR 42, Roberts Creek Rd, and sidewalk improvements same as Option A ▪ Widen Carnes Rd to add second receiving lane (700') for dual eastbound lefts Option C ▪ Widen Carnes Rd to add second southbound left-turn lane (700'). ▪ Extend third westbound through lane on OR 42 1200' west of intersection with 720' of taper ▪ 6' sidewalks would be included on the east side of Carnes Rd. Option D ▪ Widen Carnes Rd to add second southbound left-turn lane (700'). ▪ 6' sidewalks would be included on the east side of Carnes Rd.	▪ This concept would involve impacts to adjacent properties for each of the proposed options, ▪ Only Option B would avoid impacts to existing structures. ▪ No environmental resource impacts	▪ Option A: $3.1 million ▪ Option B: $2.8 million ▪ Option C: $2.1 million ▪ Option D: $1.3 million ▪ No estimates include ROW costs
12	OR 99/Grant Smith Rd (MP 76.22)	Increase intersection capacity by installing dual left turns on the eastbound approach and modifying traffic signal to provide protected left turns on all approaches	Improve operations and safety	▪ Current total entering volume: 28,000 vpd ▪ Current total entering volume: 38,000 vpd ▪ 44 crashes during a 6-year study period ▪ Would not meet the HDM mobility target, but would meet the OHP target with a v/c ratio of 0.80. ▪ Provide protected left turns for all approaches	▪ Would involve ROW impacts in the northwest, northeast, and southwest quadrants ▪ Widen OR 42 to facilitate dual left-turn lanes ▪ Widen OR 99 to facilitate additional receiving lane	▪ Would involve property impacts but would not impact existing structures ▪ No environmental resource impacts	▪ $1.0 million ▪ Does not include ROW costs

OR 42 Improvement Concepts – Summary Evaluation Matrix

ID	Location	General Description	Purpose	Traffic Operations and Safety[1,2,3]	Basic Roadway Geometry and Right of Way[4]	Environmental and Land Use[5]	Cost Opinion[6]
Network Connectivity and Access Control							
13	Rolling Hills (MP 74.77)	Extend Rolling Hills Rd to connect with Happy Valley Rd (Should be considered in conjunction with Concept 7)	Improved connectivity	▪ Current OR 42 ADT: 19,000 vpd ▪ Forecast OR 42 ADT: 27,000 vpd ▪ Current Rolling Hills Rd ADT: 500 vpd ▪ Forecast Rolling Hills Rd ADT with extension to Happy Valley Rd: 5,000 vpd ▪ Would relieve demand on capacity-constrained Carnes Rd ▪ Higher demand at OR 42 would likely warrant traffic signal (Concept 7)	▪ Would involve ROW impacts ▪ 2,400' of additional roadway, primarily outside of existing ROW ▪ Would meet collector street design standards	▪ Would involve property impacts but could avoid impacts to existing structures ▪ No environmental resource impacts	▪ $3.5 million ▪ Does not include ROW costs
14	Emils Way/Grange Rd (MP 75.53)	Reduce turning conflicts (Should be considered in conjunction with Concepts 15 and 18) ▪ Option A: Restrict traffic movements turning from Grange Rd and Emils Way to right turn onto OR 42 but allow both right and left turns from OR 42 onto the side streets. ▪ Option B: Restrict traffic movements turning to and from Grange Rd and Emils Way to right turns only.	Enhance safety for all users	▪ Currently all movements are allowed ▪ 12 crashes during a 6-year study period including one fatality Option A ▪ Eliminates some but not all of the turning-related conflicts (approximately half of reported turning crashes involved left turns from side street to OR 42) ▪ Would reroute left-turning traffic to other roadways or add U-turns to highway Option B ▪ Eliminate all left turns to and from OR 42 ▪ Eliminate all of the left turning-related conflicts (would address nearly all of the reported turning crashes) ▪ Would reroute left-turning traffic to other roadways or add U-turns to highway	No direct impacts to adjacent properties Option A ▪ Minor roadway widening within the existing ROW may be needed to add the raised median with the left-turn lanes from OR 42 ▪ Drainage relocation would need to occur Option B ▪ Raised median could be installed within the existing painted median and no widening would be necessary	▪ No environmental resource impacts ▪ No impacts to adjacent properties ▪ Potential impacts to Title VI populations on Emils Way ▪ Accessibility to local businesses would be affected – more impacts with Option B than Option A ▪ Drainage relocation would need to occur	▪ Option A: $1.3 million ▪ Option B: $300,000 ▪ Neither estimate includes ROW costs
15	Grange Rd Extension to the South/East (MP 75.53)	Create new road connection from the east end of Grange Rd to provide alternative access to OR 42 (Should be considered in conjunction with Concept 14) ▪ Option A: Create new roadway connection from east end of Grange Rd to Brittney Ave ▪ Option B: Create new roadway connection from the east end of Grange Rd to Roberts Creek Rd to create 4-way intersection with Tannhauser Ave	Provide alternative access to facilitate access management along OR 42	▪ Provides alternative access to OR 42 for local residents and businesses ▪ New connection would include pedestrian facilities Option A ▪ Would add more traffic to Brittney Rd, a local residential street that also serves a school. ▪ Traffic increases would depend on the extent of the access restrictions discussed under Concept 14. ▪ Longer than Option B and would involve out-of-direction travel for users. Option B ▪ Provides a more direct connection between Grange Rd and Roberts Creek Rd than Option A ▪ New roadway would not impact the nearby residences by adding traffic to local streets. ▪ Connection opposite Tannhauser Ave would be more than 500' from signal at OR 42 ▪ Would have adequate storage at OR 42 so that queues would not block new connection.	▪ Includes 12' travel lanes, 8' shoulders, and 6' sidewalks. ▪ Both of these extensions would require additional ROW. Both options include drainage and illumination. Option A ▪ Would include 1,200' of reconfigured and new roadway ▪ A significant portion would use existing but unimproved ROW that stretches westerly from Brittany Ave to Grange Rd. ▪ Additional ROW would still be required. Option B ▪ Would include 1,600' of reconfigured or new roadway ▪ Primarily outside of the existing ROW	▪ No impacts to existing structures ▪ No environmental resource impacts Option A ▪ Rerouted traffic to Brittney Ave would travel adjacent to a school. ▪ No impacts to existing structures Option B ▪ Would include impacts to an existing structure, ▪ Would be in agreement with long-term Douglas County plans.	▪ Option A: $2.1 million ▪ Option B: $2.5 million ▪ Neither estimate includes ROW costs Option A

OR 42 Improvement Concepts – Summary Evaluation Matrix

ID	Location	General Description	Purpose	Traffic Operations and Safety[1,2,3]	Basic Roadway Geometry and Right of Way[4]	Environmental and Land Use[5]	Cost Opinion[6]
16	Between Rolling Hills Rd and Landers Ave (MP 74.77-75.53)	Improve local connectivity and modify access to OR 42 from Rolling Hills Rd to Landers Ave, including connections between Melody Lane, Stella Street, Depriest Street, and Circle Drive	Improved connectivity and alternative access	▪ Current ADT: 17,000 vpd ▪ Forecast ADT: 24,000 vpd ▪ 7 crashes reported in the segment between Rolling Hills Rd and Landers Ave ▪ 7 crashes reported at Landers Ave ▪ Improves safety along the expressway by directing turning vehicles to targeted and signalized locations where they can be accommodated with lesser crash risk ▪ Traffic patterns would change on local streets	▪ Proposed connections would meet Douglas County local road standards ▪ Additional ROW would be required ▪ Some of these connections have been shown in approved development plans but have not yet been constructed	▪ Some alignments may have impacts on existing residential structures ▪ Traffic volumes would be higher on some local streets ▪ No environmental impacts with this concept	▪ Costs would be dependent upon chosen alignments
17	Winery Lane (MP 76.07-76.22)	Control access at Winery Lane ▪ Option A: Create new connection to Grant Smith Rd and close all access to OR 42 ▪ Option B: Limit access at OR 42 to right-in right-out and provide U-turn opportunities	Provide alternative access to facilitate access management along OR 42	Option A ▪ Diverts Winery Lane traffic to Grant Smith Rd and signalized intersection with OR 42 ▪ Low traffic volumes on Winery Lane means limited impact on Grant Smith Road intersection operations ▪ Closure of Winery Lane eliminates potential crashes associated with unsignalized intersections Option B ▪ Converts all turning movements to and from Winery Lane to right turns only ▪ Local drivers may choose alternative routes or make U-turns on OR 42	Option A ▪ Would meet Douglas County local road standards, which includes 11 foot paved travel lanes and 3 foot shoulders ▪ Would require additional ROW Option B ▪ Would include a raised median that could be installed within the existing painted median and no widening would be necessary ▪ No direct impacts to adjacent properties	Option A ▪ Additional ROW required from adjacent property owners ▪ No structures that would be impacted ▪ Coordinated with access to vacant parcels on south side of Grant Smith Rd No environmental impacts with this concept Option B ▪ Drivers would be inconvenienced by the turn restrictions	Option A ▪ $600,000 ▪ Estimate does not include ROW costs Option B ▪ $100,000
18	Lookingglass Rd to Grant Smith Rd (MP 73.88-76.22)	Provide U-Turn Opportunities at Key Locations along OR 42	Supplement intersection closures and right-in/right-out only movements	▪ Current ADT: 15,000 to 23,000 vpd ▪ Forecast ADT: 22,000 to 29,000 vpd ▪ U-turns instead of direct left turns can reduce the frequency of all crashes by approximately 20 percent ▪ Delay will increase slightly for left-turns from side-streets as a result of out-of-direction travel	▪ Raised concrete medians or paint can be used to demarcate U-turn locations within the existing medians and ROW	▪ This concept would not have environmental or land use impacts	▪ $100,000 per locations ▪ Assumes raised concrete medians are chosen

Notes:

1. Traffic operations were evaluated for concepts that were identified to address operational deficiencies. The operational assessment focuses on the volume-to-capacity (v/c) ratio for the 2011 existing and 2035 future condition.
2. At intersections where potential changes in traffic control or turn lanes were considered, the procedures in the ODOT Analysis Procedures Manual (APM) were followed.
3. Some improvements are focused on addressing safety concerns or may address safety as well as traffic operations deficiencies. Crash patterns from the six-year analysis period (2005 through 2010) are discussed for those improvements that address safety.
4. Illustrations were developed for concepts that involve infrastructure improvements.
5. Impacts to resources were qualitatively assessed based on the data assembled for the environmental and land use reconnaissance. The level of analysis of the study area is designed to identify those areas judged to have considerable potential for conflict.
6. Rough order of magnitude cost opinions were developed using present day dollars and are consistent with standard estimating methods. The estimates include a contingency factor but do not include right-of-way costs. The cost opinions are intended to help differentiate alternatives by approximating the relative costs of each project.

OR 42 Expressway Management Plan
Lookingglass Road to I-5 Exit 119

Technical Memorandum #6
Public Involvement Summary

Prepared for

Oregon Department of Transportation, Region 3
3500 NW Stewart Parkway
Roseburg, Oregon 97470

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon 97201

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6. PUBLIC INVOLVEMENT SUMMARY

The public involvement process for the OR 42 Expressway Management Plan (EMP) included a Technical Advisory Committee (TAC), a Citizen Advisory Committee (CAC), and general public outreach.

6.1. Technical Advisory Committee

The TAC provided technical and policy guidance and will serve as the primary body making recommendations about the project. The committee was composed primarily of ODOT and local jurisdiction staff.

Three (3) TAC meetings were held during development of the OR 42 EMP. Meetings were held on the following dates:

1. November 30, 2011 – Topic: Introduction (Purpose, Process, Goals & Objectives) and Work Completed (Environmental and Land Use Reconnaissance, Existing Conditions Analysis, Future Analysis, Summary of Deficiencies)
2. May 23, 2012 – Topic: Alternatives Evaluation (Concept Development and Analysis)
3. January 10, 2013 – Topic: Draft Corridor Plan (Organization, Recommended Improvements, Access Management, Other Management Actions, Final recommendations for EMP, Project Priorities)

Agendas, attendance, meeting notes, and copies of the presentations for each TAC meeting are included in Appendix 6-A.

6.2. Citizen Advisory Committee

The CAC provided stakeholder input and offer recommendations to the TAC. The committee was composed of interested citizens, property owners, business representatives, and other stakeholders along the corridor.

Three (3) CAC meetings were held during development of the OR 42 EMP. Meetings were held on the following dates:

1. November 30, 2011 – Topic: Introduction (Purpose, Process, Goals & Objectives) and Work Completed (Environmental and Land Use Reconnaissance, Existing Conditions Analysis, Future Analysis, Summary of Deficiencies)
2. May 23, 2012 – Topic: Alternatives Evaluation (Concept Development and Analysis)
3. January 9, 2013 – Topic: Draft Corridor Plan (Organization, Recommended Improvements, Access Management, Other Management Actions, Final recommendations for EMP, Project Priorities)

Agendas, attendance, meeting notes, and copies of the presentations for each CAC meeting are included in Appendix 6-B.

6.3. General Public Outreach

General public outreach included web-accessible materials and two public open houses.

6.3.1. Website

ODOT project documents (technical memoranda and reports) were posted on the ODOT Region 3 website (http://www.oregon.gov/ODOT/HWY/REGION3/pages/index.aspx) for public access.

6.3.2. Public Open Houses

Public open houses were held as informational exchanges where staff and consultant present and explain project information and the general public could provide input and comment on issues and concerns of importance to them.

Two (2) public open houses were held during development of the OR 42 EMP. Open houses were advertised in local media outlets (i.e. radio and newspaper display ads and news releases), direct mailing to property owners abutting the corridor, and the ODOT website. The open house public presentations were held on the following dates:

1. December 1, 2011 – Topic: Existing and Future Deficiencies
2. January 9, 2013 – Topic: Draft Corridor Plan

Attendance sheets, comment summaries, and copies of the presentations for each open house are included in Appendix 6-C.

6.3.3. Access Management Outreach

The following describes how the OR 42 EMP meets the provisions outlined in Senate Bill 408 - Section 4. The bill set forth requirements for facility plans and access management strategies developed for highway improvement or modernization projects, including:

1. A methodology that balances the economic development objectives of properties abutting state highways with the transportation safety and access management objectives of state highways, in a manner consistent with Douglas County's transportation system plan and land uses permitted in the County comprehensive plan.
2. A collaborative discussion and agreement between ODOT and Douglas County to identify and document the location of County roads intersecting the state highway within the project area.
3. Key principles to evaluate how properties abutting a state highway may retain or obtain access to the state highway during and after plan implementation.
4. A methodology to weigh the benefits of a highway improvement or modernization project to public safety and mobility against a) Douglas County's TSP and the land uses permitted in the County's Comprehensive Plan and b) the economic development objectives of affected real property owners who require access to a state highway.

5. Key principles for modifying, relocating or closing existing private approaches with a level of detail sufficient to inform affected real property owners of the potential for the modification, relocation or closure of existing private approaches within the plan's study area.
6. A timeline by which the plan may need to be implemented in order to meet the safety and operational needs of the state highway.
7. A long term safety and operational needs for the expressway and for all intersecting roads or streets based on an engineering analysis conducted by a traffic engineer.
8. Send notice of the key principles to Douglas County and affected real property owners by first class mail for review and comment, and adopt the key principles twenty (20) days after the date ODOT sends written notice.

Notification and Involvement

This EMP met the spirit and intent of SB 408 in making sure that affected property owners and Douglas County were aware of the planning concepts and any implications to private accesses or local street connections. Several property owners were members of the Citizen Advisory Committee (CAC) and others participated in the public open houses. Douglas County staff were members of the Technical Advisory Committee (TAC) and invited to the public open houses. Additionally, ODOT staff sent a direct mailing to all property owners abutting the expressway inviting them to the public open house and advising them that the recommended planning concepts may impact their access to the expressway including, but limited to, closure, consolidation or realignment.

Public input and involvement was critical to the success of the corridor plan. The OR EMP TAC and CAC developed a methodology to balance the economic development objectives of properties abutting the expressway with the transportation safety and access management objectives of expresswayss, in a manner consistent with Douglas County's transportation system plan and land uses permitted in the County comprehensive plan.

This balance was accomplished through the five EMP goals listed below and the supporting objectives identified in the plan. The TAC and CAC considered all these goals in identifying and selecting the expressway projects.

1. Improve safety and operations of the expressway corridor for all modes of travel.
2. Upgrade the corridor to meet Expressway design and performance standards.
3. Facilitate freight travel by maintaining efficient traffic movement through the corridor.
4. Develop integrated transportation facilities and services that support economic development.
5. Provide better accessibility to the Cities of Roseburg and Winston and the Green UUA consistent with the adopted local comprehensive land use and transportation plans.

Each planning concept considered safety for the traveling public. Concepts also considered compatibility with the County's Comprehensive Plan and Zoning land uses for properties

abutting the expressway. Local road connections are recommended parallel to expressway segments where urbanization is expected. Additionally, triggers for improvements were established for intersection safety projects that may require access consolidation and/or closure. These additional considerations are included in each project sheet and the access management plan to assure coordination and collaboration with Douglas County staff and affected property owners during project level scoping.

City/County Collaboration

The OR 42 EMP TAC facilitated a collaborative discussion and agreement between ODOT and Douglas County to identify and document the location of County roads intersecting the state expressway within the project area. This included developing an access management plan (see Table 6-1) illustrating actions and key principles for managing access by expressway segment.

Table 6-1. Access Management Plan

ID	Description	Triggers	Priority
ACCESS MANAGEMENT MEASURES			
3	**OR 42/Rolling Hills Rd Intersection (74.77):** Install traffic signal at OR 42/Rolling Hills Rd, improve access road connections to Jackie Lane, and restrict access to OR 42 from west of Rolling Hills Rd through Jackie Lane	▪ Traffic signal warrants ▪ Continued pattern of turning and angle collisions ▪ Identified in worst 10% in SPIS	High
5	**OR 42 – East of Rolling Hills Rd through Landers Ave (74.88-75.46):** Add raised barrier to restrict turn movements to right-in/right-out	▪ Continued pattern of turning and angle collisions ▪ Identified in worst 10% in SPIS	Medium
8	**OR 42/Emils Way/Grange Road Intersection (74.46-75.60):** Add raised median to restrict turn movements to left-in/right-in/right-out	▪ Continued pattern of crashes related to left turns ▪ Identified in worst 10% in SPIS	High
12	**OR 42/Winery Ln Intersection (76.03-76.12):** Add raised barrier to restrict turn movements to right-in/right-out	▪ Continued pattern of turning and angle collisions ▪ Identified in worst 10% in SPIS	Medium
LOCAL NETWORK IMPROVEMENTS			
14	**Lookingglass Rd and Pepsi Rd:** Extend Lookingglass Rd eastward and Pepsi Rd westward to connect at 4-way intersection, close current connections to OR 42, connect other access points to extensions; and install traffic signal	▪ Traffic signal warrants ▪ Persistent congestion and queuing on side streets ▪ Crash pattern of turning and angle collisions	Low
15	**Local Network Connections:** Extend Rolling Hills Rd (RH) northward to Happy Valley Rd and improve connectivity between Cameron Ave, Melody Ln, Chandler Dr, Stella St and other local streets as identified in the Douglas County TSP	▪ Phased with development ▪ Access restrictions on OR 42 (Projects 3 and 5) ▪ Douglas County implements TSP project	RH: High Other: Medium to low
16	**Grange Rd:** Create a new connection from the east end of Grange Rd to Roberts Creek Rd via Brittney Ave as identified in the Douglas County TSP	▪ Access restrictions on OR 42 (Project 8) ▪ Douglas County implements TSP project	High

Table 6-1. Access Management Plan

ID	Description	Triggers	Priority
17	**Winery Lane:** Extend Winery Lane to Grant Smith Rd	▪ Phased with development ▪ Access restrictions on OR 42 (Project 12)	Low
TRANSPORTATION SYSTEM MANAGEMENT MEASURES			
TSM3	**OR 42/Rolling Hills Road Intersection (74.77):** Permit U-turns for passenger vehicles with protected left-turn arrow.	▪ Access restrictions on OR 42 (Projects 5 and 8) ▪ Concurrent with Project #3	NA
TSM4	**OR 42/Carnes Road/Roberts Creek Road Intersection (75.72):** Permit U-turns for passenger vehicles with protected left-turn arrow.	▪ Access restrictions on OR 42 (Projects 5, 8, and 12)	NA
TSM5	**OR 42/OR 99/Grant Smith Road Intersection (76.22):** Permit U-turns for passenger vehicles with protected left-turn arrow.	▪ Access restrictions on OR 42 (Project 12)	NA
PRIVATE ACCESS CONTROL MEASURES			
AC	**Private Accesses:** Consolidate or close driveways in an effort to move towards achieving applicable access spacing standards	▪ Property development or redevelopment ▪ Construction of EMP improvements	Ongoing
	Access Reservations: Purchase reservations of access when reasonable alternative access options are available	▪ Property development or redevelopment ▪ Construction of EMP improvements	Ongoing

The access management plan includes key principles for modifying, relocating or closing existing private approaches with a level of detail sufficient to inform affected real property owners of the potential for the modification, relocation or closure of existing private approaches within the plan's study area.

The OR 42 EMP TAC and CAC developed triggers for implementing access management actions consistent with Douglas County's TSP and the land uses permitted in the County's Comprehensive Plan. This included assessing the economic development objectives of affected real property owners who require access to the expressway. Access improvements are triggered by land use changes (new development or redevelopment), when future expressway improvements are constructed, or when expressway safety and operational issues arise.

The access management plan also inventoried each connection to the expressway to establish the number of existing accesses acknowledged by the plan. After consideration of other options, the TAC and CAC recommended access spacing standards for the OR 42 EMP that are consistent with the current expressway standards in the Oregon Highway Plan. This process included acknowledging existing accesses. Additionally, a provision was added to allow property owner to demonstrate progress toward meeting a minimum access spacing standard in areas where the minimum standard cannot be met and/or it is not feasible.

Monitoring Program

The EMP includes a monitoring program to assure long term safety and operational needs for the expressway and for all intersecting roads or streets. Monitoring includes reviewing periodic traffic counts, evaluation of crash histories and assessment of development proposals traffic impact studies prepared by a licensed traffic engineer as triggers to recommend and elevate expressway projects for STIP consideration.

Public Notice

ODOT mailed the notice of intent to adopt the OR 42 EMP to Douglas County for an opportunity to review and comment on the planning concepts. ODOT also mailed a letter to affected property owners abutting the expressway for an opportunity to review and comment on the key principles. These notices were sent at least twenty (20) days prior to the OTC's adoption.

Attachments:

Appendix 6-A. Technical Advisory Committee Meeting Materials
Appendix 6-B. Citizen Advisory Committee Meeting Materials
Appendix 6-C. Public Open House Meeting Materials

Appendix 6-A

Technical Advisory Committee Meeting Materials

OR 42 Expressway Management Plan
Technical Advisory Committee

Meeting #1

10:00 AM to 12:00 PM

November 30, 2011

ODOT Region 3 Offices
3500 NW Stewart Parkway
Roseburg, OR 97470

AGENDA

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1. Introductions	Tom Guevara, ODOT
2. Work Completed • Future Baseline Conditions • Draft Deficiency Matrix	Jennifer Danziger, DEA Joshan Rohani, DEA
3. Project Discussion • Concept Development	All
4. Next Steps • Schedule • Upcoming meetings	Jennifer Danziger, DEA Tom Guevara, ODOT

OR 42 Expressway Management Plan
Technical Advisory Committee (TAC)

Meeting #1

10:00 AM to 12:00 PM

November 30, 2011

ODOT Region 3 Offices
3500 NW Stewart Parkway
Roseburg, OR 97470

Meeting Notes

Attendees: See Attached List

Introductions

Thomas Guevara opened the first Technical Advisory Committee (TAC) meeting with a round of introductions, where each person in attendance stated their name and community or agency they were representing. He introduced himself as the ODOT project manager and identified the consultant team.

Work Completed

Jennifer Danziger, the Consultant project manager, provided the group with a description of project, study area, planning process, and draft goals/objectives that will guide this study. These items were summarized in slides 3 through 6 and are presented in:

- Technical Memorandum #1 – Review of Plans and Policies
- Technical Memorandum #2 – Study Area Definition, Goals and Objectives

Joshan Rohani, the Consultant traffic engineer summarized the work that has been conducted thus far to evaluate existing and future baseline conditions. Slides 7 through 24 summarize the findings which are presented in:

- Technical Memorandum #3 – Existing Conditions
- Technical Memorandum #4 – Future Baseline (no-build) Conditions

Jennifer and Joshan summarized the list of deficiencies that have been identified through observations and analyses to date (slide 25).

The following comments/questions were received during the presentation:

- Although the "green" bridge has several identified deficiencies, the State has had a difficult time finding funds to replace it. Several improvements have taken place in recent years, including improvements to vertical clearance.
- There are a lot of pedestrian crossings between Emils Way and Carnes Road.

- The possibility of creating an economic development goal was discussed by the group. *Consensus on this goal was not reached.*

Project Discussion

Jennifer and Joshan opened the floor up for comments, suggestions, and concerns regarding the deficiencies summarized. The intent was to gain perspective and ideas for the next phase of the corridor project: concept development.

The following comments/questions were received during the discussion:

- Should we consider an extension of Emils Way?
- We should consider an extension of Grange Road east to Roberts Creek Road.
- A second southbound left-turn lane may be warranted at OR 99.
- There was interest in evaluating a couple of improvement options (relocation or otherwise) at Lookingglass Road.
- Access control with right-in right-out options was discussed as a possible improvement at several sidestreet locations.
- Can we lower the speed limits in the corridor, or are there ways of redesigning the corridor to lower travel speeds?

Next Steps

DEA will take comments from the advisory committee meetings and open house and use them to develop improvement alternatives to address deficiencies for the next phase of the project. Analysis of the concepts will be conducted; concepts evaluation and presentation will occur during the next TAC and CAC meetings which are expected to occur in late February or early March of 2012. We will provide as much notice as possible about the schedule for those meetings.

Attachments:
Attendance Sheet
Agenda
PowerPoint Presentation

Sign In Sheet

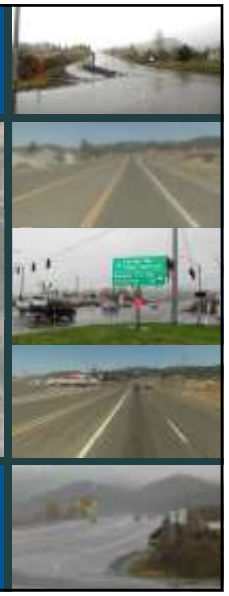
OR 42 Expressway Management Plan
Technical Advisory Committee (TAC)
November 30, 2011

Initials	Name	Agency	Phone No.	E-Mail
TG	Thomas Guevara Jr.	ODOT Project Manager	541-957-3692	Thomas.Guevara@odot.state.or.us
JR	Jennifer Danziger	DEA Project Manager	503-499-0381	Jed@deainc.com
	Joshan Rohani	DEA Traffic Engineer	503-499-0259	Jwr@deainc.com
	Ed Moore	DLCD	971-239-9454	ed.w.moore@state.or.us
JB	John Boyd	Douglas County Planning	541-440-4289	jjboyd@co.douglas.or.us
ML	Mike Luttrell	Douglas County Public Works	541-440-4481	kmluttre@co.douglas.or.us
	Jennifer Sikes	City of Winston Public Works	541-679-6114	jennifer.sikes@winstoncity.org
RP	Rick Patton	City of Winston Public Works	541-679-6114	rick.patton@winstoncity.org
	Tonya Theiss-Skrip	Cow Creek Tribe of Indians	541-677-5537	ttheiss@cowcreek.com
✓	Scott Adams	ODOT Local Gov't Liaison	541-957-3636	Scott.Adams@odot.state.or.us
	Pete Castro	ODOT GeoTech	541-957-3603	Pete.T.Castro@odot.state.or.us
	Jim Collins	ODOT Environmental	541-957-3595	James.D.Collins@odot.state.or.us
LE	Leslie Elbon	ODOT Motor Carrier	541-776-6004	Leslie.A.Elbon@odot.state.or.us
	Bob Grubbs	ODOT Bridge	541-957-3579	Robert.E.Grubbs@odot.state.or.us
✓	Roxanne Hanneman	ODOT R/W	541-957-3556	Roxanne.M.Hanneman@odot.state.or.us
	Ronald Hughes	ODOT Access Management	541-957-3696	Ronald.H.Hughes@odot.state.or.us
	Robin Marshburn	ODOT Freight	503-986-3696	Robin.L.Marshburn@odot.state.or.us
MM	Michael Morris	ODOT Roadway	541-774-6370	Michael.L.Morris@odot.state.or.us
JWO	John Oltman	ODOT Traffic Engineer	541-957-3539	John.W.Oltman@odot.state.or.us
	Jarvis Pennington	ODOT District 7	541-957-3666	Jarvis.G.Pennington@odot.state.or.us
	Bob Sechler	ODOT Traffic Investigator	541-957-3541	Robert.A.Sechler@odot.state.or.us
DVS	Peter Schuytema	ODOT TPAU	503-986-4110	Peter.L.Schuytema@odot.state.or.us
	Joe Thomas	ODOT Survey	541-774-6357	Joseph.R.Thomas@odot.state.or.us
	CHRIS HUNTER	ASSISTANT DISTRICT MANAGER		

Bill on phone

OR 42 Expressway Management Plan (EMP)

Technical Advisory Committee
Meeting #1 – November 30, 2011



Presentation Topics

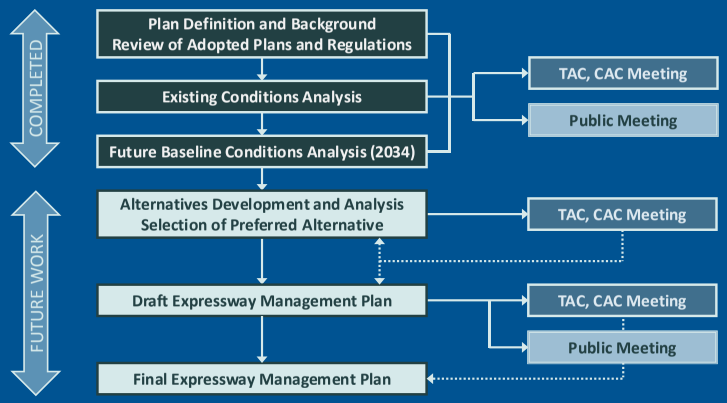
1. Project Overview
   - Purpose
   - Process
   - Goals & Objectives
2. Work Completed
   - Environmental and Land Use Reconnaissance
   - Existing Conditions Analysis
   - Future Analysis
   - Summary of Deficiencies
3. Next Steps

Project Purpose

- Determine how the existing highway functions
  - Existing conditions – Year 2011
  - Future conditions – Year 2035
- Identify strategies/improvements to enhance safety and capacity within the corridor
  - Demand and System Management
  - Additional Infrastructure
- Build upon other transportation projects
  - Statewide Transportation Improvement Program
  - I-5 Exits 119/120 Interchange Area Management Plan
  - OR 42 Corridor Plan

Corridor Planning Area

EMP Planning Process



EMP Draft Goals

The goals of this EMP are to develop a plan for improvements that can be implemented over time to:

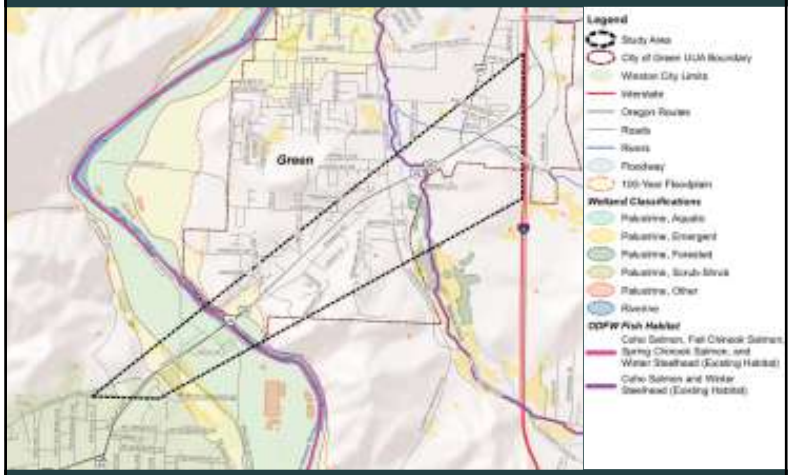
- Improve safety and operations of the expressway corridor for all modes of travel.
- Upgrade the corridor to meet Expressway standards.
- Facilitate freight travel by maintaining efficient through movement in the corridor.
- Provide better accessibility to Roseburg, Winston, and the Green Area consistent with the adopted local comprehensive land use and transportation plans

Environmental and Land Use Reconnaissance

Reconnaissance was performed to understand existing environmental and land use issues and to help inform the process of developing conceptual alternatives.

- Environmental Reconnaissance
  - Natural resources such as riparian corridors, wetlands, wildlife habitat, and recreation trails
  - Wildlife crossings and threatened and endangered species
  - Floodplains and floodways

Natural Features

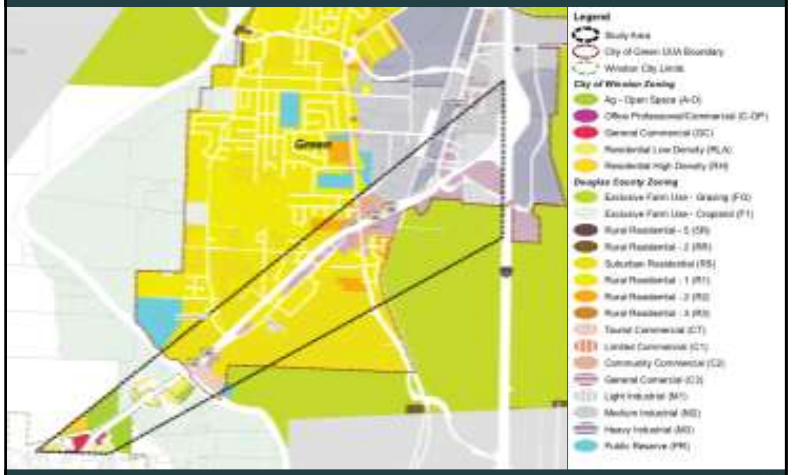


Environmental and Land Use Reconnaissance (continued)

- Land Use Summary
  - Zoning and Comprehensive Plan designations
  - Community features
    - Parks and recreation areas
    - Historical and Archaeological Resources
    - Section 4(f) and 6(f) resources
  - Right-of-way
  - Canals and Culverts
- Socioeconomic and Environmental Justice

Tech Memo #3 includes an Environmental and Land Use "Red Flag" Summary

Zoning Map Designations



Existing Condition Analysis

- Transportation System Inventory
  - Roadways
  - Pedestrian and Bicycle Facilities
  - Transit
  - Freight
  - Rail
- Traffic Conditions
  - Design Hourly Volumes - 2011
  - Traffic Operations – 11 intersections
  - Crash History – 2005 through 2009

OR 42 Corridor Inventory

Pedestrian and Bicycle Facilities

- Sidewalks Present
  - West of the study area (on the south side), until the expressway begins.
  - Only two marked crosswalks (at Carnes Road and OR 99/Grant Smith)
- Bike Lanes Present
  - West of the study area (on the south side), until the expressway
- Multi-use Pathway Present
  - From Lookingglass Road to OR 99/Grant Smith Road along the north side of the expressway
  - Limited crossing opportunities

Other Facilities

- Transit Facilities
  - Two Fixed-Route Services: South County Route 99, and Winston Commuter Route
    - Runs along OR 42 between I-5 and Winston
    - Only one stop in study area (Carnes Road)
  - Paratransit (Dial-a-Ride)
    - Five days per week
    - For those with disabilities who cannot use fixed-routes
- Rail
  - Central Oregon and Pacific Railroad (CORP)
  - No passenger rail service

Existing Traffic Volumes

- 11 Intersections along OR 42
- Common peak hour between 3:45 and 4:45 PM
- Converted to design hourly volumes (DHV) = 30th highest hour
- Traffic count data primarily collected in 2011

Intersection Operations Evaluation

- Performance Measures
  - Volume/Capacity Ratio
    - *Volume = Traffic Demand*
    - *Capacity = Maximum Throughput*
  - Level of Service A through F based on delay
  - 95th Percentile Queues
- Performance Standards
  - ODOT Standards
    - V/C ratio of 0.70 everywhere along OR 42

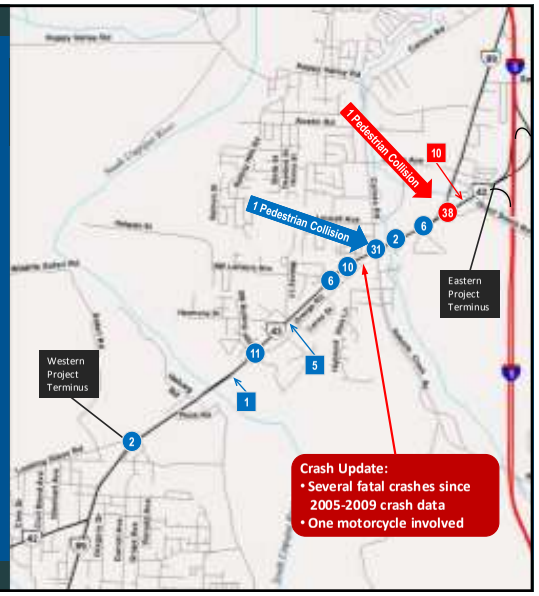
2011 Existing Intersection Operations

Intersection	Critical Movement	2011 PM Peak Hour V/C Ratio	LOS	Delay (sec.)	Operational Standards
OR 42 @ Lookingglass Road	SB L	0.37	C	29	0.70
OR 42 @ Umpqua Safari RV Park	NB L/R	0.03	B	9	0.70
OR 42 @ Pepsi Road	WB L	0.09	B	5	0.70
OR 42 @ Helweg Road / Winston Section Road	SB L/R	0.02	C	14	0.70
OR 42 @ Rolling Hills Road / Andorra Drive	NB L/T/R	0.17	C	13	0.70
OR 42 @ Landers Avenue	SB L	0.20	C	36	0.70
OR 42 @ Emils Way / SW Grange Road	NB L/T/R	0.56	E	20	0.70
OR 42 @ Carnes Road/Roberts Creek Road (Signalized)	Overall	**0.77**	C	30	0.70
OR 42 @ Art Mill Lane	NB L/R	0.02	A	20	0.70
OR 42 @ Winery Lane	WB L	0.01	B	23	0.70
OR 42 @ OR 99/Grant Smith Road (Signalized)	Overall	**0.78**	C	24	0.70

Safety Summary

- 122 crashes over 5 years (2005 through 2009)
- 2 crashes resulted in fatalities or severe injuries
- Highest crash intersections:
  - Carnes Road/Roberts Creek Road (31 crashes)
  - OR 99/Grant Smith Road (38 crashes)
  - Several recent fatal crashes near Grange Road since 2005-2009 Crash Data
- Highest crash segment:
  - From Rolling Hills Road/Andora Drive to Emils Way/Grange Road (32 crashes, including intersections)
- Top 10% Safety Priority Index System (SPIS) Site
  - Surrounding Carnes Road/Roberts Creek Road

OR 42 Crash Summary (2005-2009)



LEGEND

- Intersection Crashes
- Segment Crashes
- Fatal or Severe Injuries Occurred
- Other Injuries or Property Damage Only

Future Baseline Condition Analysis

- Future Traffic Volumes
  - 2035 – Analysis year, using Roseburg Model to forecast traffic volumes
  - Peak Hour Volumes at Intersections
  - Average Daily Volumes on Segments
- Operational Analysis
  - Intersections (V/C, LOS, Queues)

Future Traffic – 2034 Baseline

- Two forecast scenarios developed:
  - 2034 Future Baseline Scenario
    - Based on current 2010 traffic volumes
    - Applies forecast growth from regional travel demand model
  - 2034 Future Baseline Sensitivity Scenario
    - Applies 15% growth to all forecasts from the 2034 Future Baseline Scenario

Traffic Volume Summary

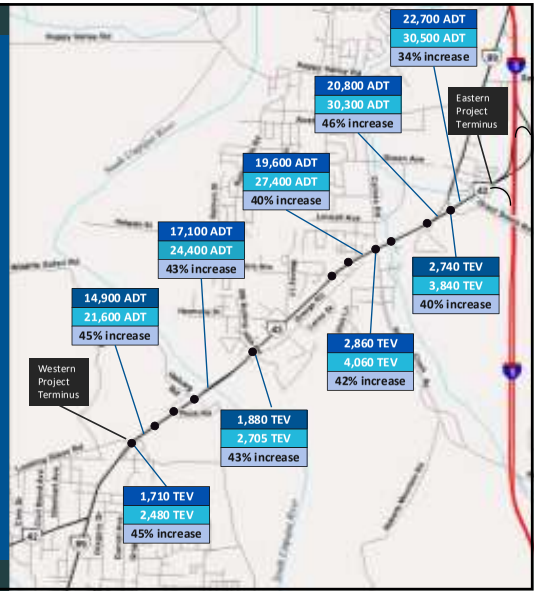
LEGEND

TEV = Total Entering Vehicles (at an intersection in 1 hour)

ADT = Average Daily Traffic (on a roadway segment)

2011 Volume
2035 Volume
% Increase

Note: Future ADT volumes are based on peak hour volume growth.



2035 Future Intersection Operations

Intersection	Critical Movement	2035 PM Peak Hour V/C Ratio	LOS	Delay (sec.)	Operational Standards
OR 42 @ Lookingglass Road	SB L	**0.72**	E	168	0.70
OR 42 @ Umpqua Safari RV Park	NB L/R	0.04	C	19	0.70
OR 42 @ Pepsi Road	WB L	0.13	B	13	0.70
OR 42 @ Helweg Road / Winston Section Road	SB L/R	0.03	D	37	0.70
OR 42 @ Rolling Hills Road / Andorra Drive (Signalized)	Overall	0.64	A	10	0.70
OR 42 @ Landers Avenue	SB L	0.49	E	93	0.70
OR 42 @ Emils Way / SW Grange Road	NB L/T/R	**>2.0**	F	>300	0.70
OR 42 @ Carnes Road/Roberts Creek Road (Signalized)	Overall	**0.98**	D	46	0.70
OR 42 @ Art Mill Lane	NB L/R	0.02	C	20	0.70
OR 42 @ Winery Lane	WB L	0.01	B	23	0.70
OR 42 @ OR 99/Grant Smith Road (Signalized)	Overall	**0.90**	C	43	0.70

2034 Future Queuing Concerns

OR 42 @ Lookingglass Road
- Southbound right-turn queues occasionally extend beyond storage

OR 42 @ Pepsi Road
- Northbound right-turn queues occasionally extend beyond storage

OR 42 @ Rolling Hills Road/Andorra Drive (Signalized)
- Northbound queues occasionally extend beyond next public access
- Southbound queues occasionally extend beyond next public access

OR 42 @ Emils Way
- Northbound queues occasionally extend beyond next public access

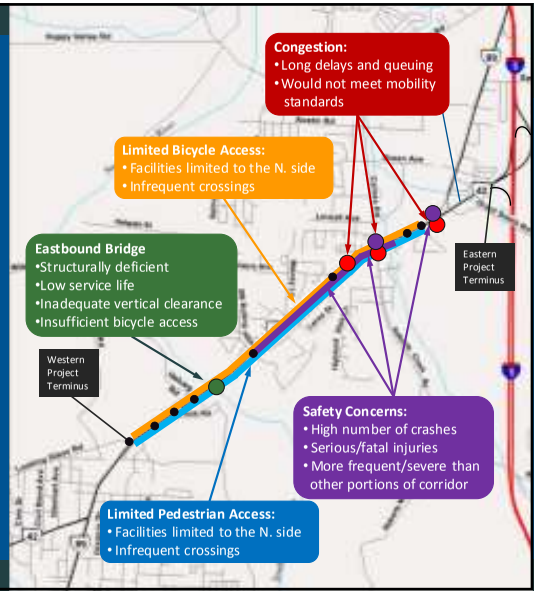
OR 42 @ Carnes Road/Roberts Creek Road (Signalized)
- Queues occasionally extend beyond storage on all approaches

OR 42 @ OR 99/Grant Smith Road (Signalized)
- Eastbound left-turn and southbound left-turn queues occasionally extend beyond storage
- Westbound right-turn queues regularly extend beyond storage

Identified Issues

LEGEND

- Spot Issue
- Segment Issue
- Safety
- Operational
- Pedestrian
- Bicycle
- Bridge



Next Steps

- Concept Analysis and Evaluation
- Selection of Preferred Concepts
- Upcoming Meeting Dates
  - Next TAC and CAC Meetings
    - January or February 2012

OR 42 Expressway Management Plan
Technical Advisory Committee

Meeting #2

10:00 AM to 12:00 PM

May 23, 2012

ODOT Region 3 Offices
3500 NW Stewart Parkway
Roseburg, OR 97470

AGENDA

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1. Introductions	Thomas Guevara, ODOT
2. Update on Project Status	Thomas Guevara, ODOT
• Overview of Process	Jennifer Danziger, DEA
• Current Status	
3. Corridor Improvement Concepts	Jennifer Danziger, DEA
• Concept Development	Joshan Rohani, DEA
• Concept Analysis	
4. Discussion	All
• Ideas for modifications to concepts or additional concepts that could be evaluated	
• Input for selection of preferred concepts	
5. Next Steps	Jennifer Danziger, DEA
• Schedule	Thomas Guevara, ODOT
• Upcoming meetings	

OR 42 Expressway Management Plan
Technical Advisory Committee (TAC)

Meeting #2

10:00 AM to 12:00 PM

May 23, 2012

ODOT Region 3 Offices
3500 NW Stewart Parkway
Roseburg, OR 97470

Meeting Notes

Attendees: See Attached List

Introductions

Thomas Guevara opened the second Technical Advisory Committee (TAC) meeting with a round of introductions, where each person in attendance stated their name and community or agency they were representing. He introduced himself as the ODOT project manager and identified the consultant team.

Update on Project Status

Jennifer Danziger, the Consultant project manager, provided the group with a schedule update, an overview of work completed, and a review of the project goals.

Corridor Improvement Concepts

Jennifer provided the group with a summary of the three key improvement types:

- Multi-Modal Improvements
- Intersection Improvements
- Network Connectivity and Access Control

Jennifer also provided a summary of the evaluation criteria used in the development of the proposed concepts. Joshan Rohani, the Consultant traffic engineer facilitated a detailed discussion of each of the proposed improvement concepts. Six key factors were discussed for each of the improvement concepts:

- Purpose
- Description
- Traffic operations and safety implications (with and without)
- Basic roadway geometry and right of way implications
- Environmental and land use considerations
- Cost opinions

Comments and questions regarding each of the proposed concepts are shown in italics below:

- **Concept 1 – Lookingglass Rd to OR 99/Grant Smith Rd – Enhance Bicycle and Pedestrian Facilities**
    - *Maintenance of the buffer strip could be a concern. Would need to coordinate with District.*
    - *Do we need to extend east of the river if we provide an undercrossing at the Green Bridge?*
    - *This is good to have a focus on multi-modal connectivity.*
- **Concept 2 – Lookingglass Rd to OR 99/Grant Smith Rd – Install Roadway Lighting at Key Locations**
    - *No comments.*
- **Concept 3 – Multi-Use Undercrossing at Winston Section Road**
    - *Does this eliminate or reduce the need for multi-use facilities along the south side of OR 42?*
- **Concept 4 – Construct sidewalks with curb and gutter along length of Grange Rd**
    - *Is this consistent with the County TSP? Would the County support this project?*
    - *Would this minimize the need to provide improvements along the south side of OR 42?*
    - *Final plan should show how bikes/peds would flow throughout corridor*
    - *Is this necessary if we have undercrossing at bridge?*
- **Concept 5 – Provide a park and ride facility that coordinates with adjacent bus stop**
    - *This would not provide ideal access – limitations present on both OR 42 and Carnes Road*
    - *Entire site is not owned by ODOT*
    - *There may be soil contaminates at this location*
    - *Could perhaps be relocated to Lookingglass or on south side of highway*
- **Concept 6 – Relocate Lookingglass Rd to connect at 4-way intersection**
    - *Option B or some variation is preferred by the TAC.*
    - *Would need to be sensitive to Umpqua Safari residents (Environmental Justice issues)*
    - *Would a goal exception be needed for agricultural land?*
- **Concept 7 – Signalize Rolling Hills Rd**
    - *The project should be included in the plan but timing as related to STIP will be addressed outside of this project*
- **Concepts 8-10 – Add right-turn deceleration lanes**
    - *Allowing for higher speed turns from OR 42 may allow for higher-speed traffic on side streets. Should consider possible impacts.*
    - *Landers is very narrow and cannot accommodate higher speeds*

- **Concept 11 – Increase intersection capacity at OR 42/Carnes Road**
    - *Extremely ROW constrained on Carnes*
    - *Should consider alternative mobility standard to reduce impacts*
    - *Would be a good project for phased implementation*
- **Concept 12 – Increase intersection capacity and modify signal timing at OR 99/Grant Smith Rd**
    - *No significant concerns*
    - *Should alternative mobility standards be considered here?*
- **Concept 13 – Extend Rolling Hills Rd to connect with Happy Valley Rd**
    - *Planned project*
- **Concept 14 – Reduce turning conflicts at OR 42 at Emils Way/Grange Rd**
    - *Concerns with U-turns from Emils without a traffic signal at Rolling Hills Road.*
    - *Would work best with concept #15*
- **Concept 15 – Create new road connection from the east end of Grange Rd to Roberts Creek Rd**
    - *Tannhauser Ave alignment is preferred by TAC*
- **Concept 16 – Improve local connectivity and modify access to OR 42 from Rolling Hills Rd to Landers Ave**
    - *Also connect Melody with Chandler (in County TSP)*
- **Concept 17 – Control access at Winery Lane**
    - *Combine options A and B.*
    - *Allow left in with barrier past right lane from OR 99*
- **Concept 18 – Provide U-Turn opportunities at key locations along OR 42**
    - *U turns not legal at unsignalized intersections*

Next Steps

Additional comments on concepts and memo are due back to Thomas Guevara by June 15, 2012. DEA will take comments from the advisory committees and use them to develop the preferred alternatives to address deficiencies for the next phase of the project. Analysis of the refined concepts will be conducted; a presentation of the preferred alternative will occur during the next TAC and CAC meetings which are expected to occur in the fall. We will provide as much notice as possible about the schedule for those meetings.

Attachments:
Attendance Sheet
Agenda
PowerPoint Presentation

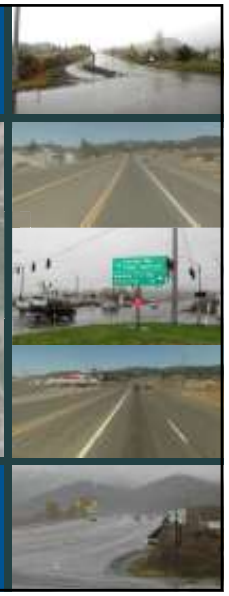
Sign In Sheet

OR 42 Expressway Management Plan
Technical Advisory Committee (TAC)
May 23, 2012

Initials	Name	Agency	Phone No.	E-Mail
TG	**Thomas Guevara Jr.**	ODOT Project Manager	541-957-3692	Thomas.Guevara@odot.state.or.us
JD	**Jennifer Danziger**	DEA Project Manager	503-499-0381	Jed@deainc.com
JR	**Joshan Rohani**	DEA Traffic Engineer	503-499-0259	Jwr@deainc.com
	Ed Moore	DLCD	971-239-9454	ed.w.moore@state.or.us
	John Boyd	Douglas County Planning	541-440-4289	jjboyd@co.douglas.or.us
K	**Mike Luttrell**	Douglas County Public Works	541-440-4481	kmluttre@co.douglas.or.us
	Jennifer Sikes	City of Winston Public Works	541-679-6114	jennifer.sikes@winstoncity.org
	Tonya Theiss-Skrip	Cow Creek Tribe of Indians	541-677-5537	ttheiss@cowcreek.com
	Scott Adams	ODOT Local Gov't Liaison	541-957-3636	Scott.Adams@odot.state.or.us
SCH	**Susan Chase**	ODOT Motor Carrier	541-957-3605	Susan.M.Chase@odot.state.or.us
	Jim Collins	ODOT Environmental	541-957-3595	James.D.Collins@odot.state.or.us
	Leslie Elbon	ODOT Motor Carrier	541-776-6004	Leslie.A.Elbon@odot.state.or.us
	Roxanne Hanneman	ODOT R/W	541-957-3556	Roxanne.M.Hanneman@odot.state.or.us
CH.	**Chris Hunter**	ODOT District 7	541-957-3689	Chris.Hunter@odot.state.or.us
	Michael Swede Hays	ODOT Rail	503-986-4322	Michael.D.Hays@odot.state.or.us
HRH.	**Ronald Hughes**	ODOT Access Management	541-957-3696	Ronald.H.Hughes@odot.state.or.us
	Robin Marshburn	ODOT Freight	503-986-3696	Robin.L.Marshburn@odot.state.or.us
MLM	**Michael Morris**	ODOT Roadway	541-774-6370	Michael.L.Morris@odot.state.or.us
JWO	**John Oltman**	ODOT Traffic Engineer	541-957-3539	John.W.Oltman@odot.state.or.us
JP.	**Jarvis Pennington**	ODOT District 7	541-957-3666	Jarvis.G.Pennington@odot.state.or.us
PS	**Peter Schuytema**	ODOT TPAU	503-986-4110	Peter.L.Schuytema@odot.state.or.us
	Joe Thomas	ODOT Survey	541-774-6357	Joseph.R.Thomas@odot.state.or.us
	William Warncke	ODFW	503-947-6095	William.Warncke@state.or.us
	Ervin Lanier	ODOT		

OR 42 Expressway Management Plan (EMP)

Technical Advisory Committee
Meeting #2 – May 23, 2012



Presentation Topics

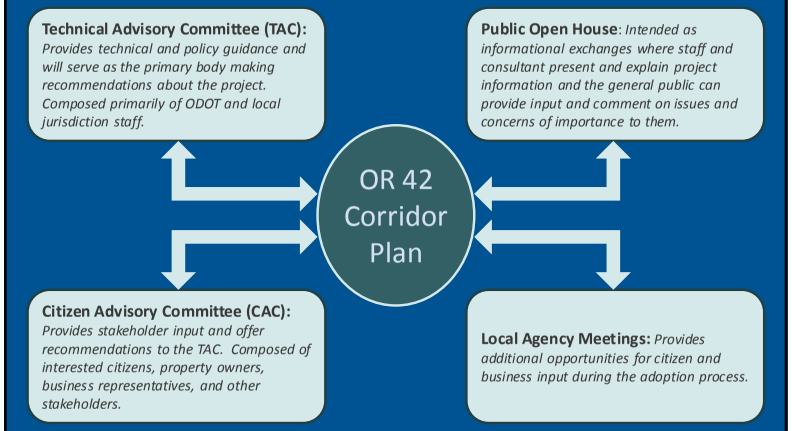
1. Project Overview Recap
2. Concept Development
3. Concept Alternatives Analysis
4. Discussion
   - Ideas for modifications to concepts or additional concepts that could be evaluated
   - Input for selection of preferred concepts
5. Next Steps

Project Purpose

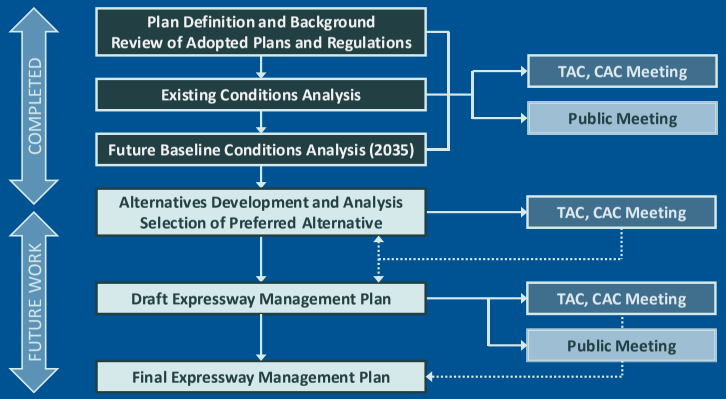
- Determine how the existing highway functions
  - Existing conditions – Year 2011
  - Future conditions – Year 2035
- Identify strategies/improvements to enhance safety and capacity within the corridor
  - Demand and System Management
  - Additional Infrastructure
- Build upon other transportation projects
  - Statewide Transportation Improvement Program
  - I-5 Exits 119/120 Interchange Area Management Plan
  - OR 42 Corridor Plan

Corridor Planning Area

Public Involvement Process



EMP Planning Process



Concept Development

- EMP Goals and Objectives
- Types of Improvements
- Evaluation Criteria
- Organization

EMP Goals

The goals of this EMP are to develop a plan for improvements that can be implemented over time to:

- Improve safety and operations of the expressway corridor for all modes of travel.
- Upgrade the corridor to meet Expressway standards.
- Facilitate freight travel by maintaining efficient through movement in the corridor.
- Provide better accessibility to Roseburg, Winston, and the Green Area consistent with the adopted local comprehensive land use and transportation plans

Types of Improvements

- Multi-Modal Improvements
  Potential improvements to enhance bicycle, pedestrian, and transit facilities along the OR 42 corridor.
- Intersection Improvements
  Potential improvements to improve traffic flow, provide additional capacity, or address safety concerns at individual intersections within the OR 42 corridor.
- Network Connectivity and Access Control
  Potential roadway connections that would improve access for local traffic, address conformity to access control standards along OR 42, and improve safety.

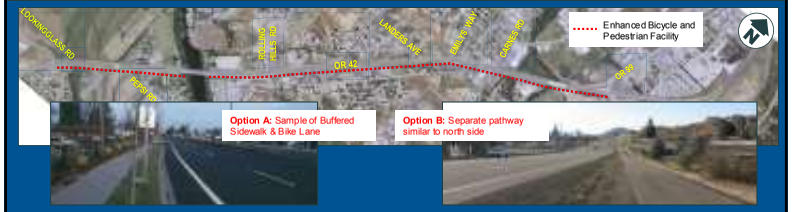
Concept Evaluation Criteria

- Traffic Operations and Safety
  - *Does the improvement address existing operational or safety concerns?*
  - *Does it address system deficiencies?*
  - *Would it cause additional concerns?*
- Basic Roadway Geometry and Right of Way (ROW)
  - *How might the improvement look?*
  - *Would it require additional right of way?*
  - *Are there additional factors to consider in design?*
- Environmental and Land Use
  - *Would it have any potential impact to environmental resources?*
  - *How would it affect adjacent land uses?*
- Cost Opinion*
  - *How much would it cost?*

** Cost opinions do not include estimates of ROW costs or mitigation.*

Concept Locations

Concept 1 – Lookingglass Rd to OR 99/Grant Smith Rd – Enhance Bicycle and Pedestrian Facilities



Purpose: Provide facilities along OR 42 for all modes of travel

Description: Enhance bicycle & pedestrian facilities on south side of OR 42:
- Option A: Stripe eastbound bike lane & provide buffered sidewalk for pedestrians
- Option B: Provide 2-way path with buffer from expressway

Traffic Operations & Safety:
- Both options have potential to improve pedestrian safety
- Option A: Bike lanes clearly define travel way for bicyclists
- Option A: Reduces need for pedestrians & bicyclists to cross expressway
- Option B: Bicyclists also separated from traffic → safer than Option A

Basic Roadway Geometry & Right of Way (ROW):
- Both options could be within the available ROW
- Option A: Includes 8' right shoulder, 6' buffer, a 6' landscape buffer, and a 6' sidewalk with drainage improvements
- Option B: Includes 10' multi-use path with 5' buffer

Environmental & Land Use:
- South Umpqua River is riparian corridor with aquatic habitat, wildlife habitat, and wetlands
- No land use impacts

Cost Opinions:
- Does not include bridge widening or culverts
- Option A: $5.5 million
- Option B: $3.8 million

Concept 2 – Lookingglass Rd to OR 99/Grant Smith Rd – Install Roadway Lighting at Key Locations

Purpose: Enhance visibility and safety in the corridor

Description: Install roadway lighting at key locations

Traffic Operations & Safety:
- Improved safety and security for all modes
- Improved visibility for bicyclists on Roadway, pedestrians on sidewalks and crossing roadways, etc.

Basic Roadway Geometry & Right of Way (ROW):
- Improvements included in this concept would occur within the available right of way (ROW)

Environmental & Land Use:
- There are not any anticipated environmental or land use impacts associated with the proposed lighting improvements.
- Lighting spillover and skyglow may reach adjacent properties.

Cost Opinions:
- Specific costs are dependent on number of locations identified and will be determined as the preferred concept is identified

Concept 3 – Multi-Use Undercrossing at Winston Section Road

Purpose: Provide safe route for bicyclists and pedestrians to cross OR 42

Description: Connect Winston Section Rd to the multi-use path on the north side of OR 42 with a multi-use path undercrossing

Traffic Operations & Safety:
- Minimizes pedestrians & bicycles crossing at unsignalized locations
- Improves safety for vulnerable users
- Some out-of-direction travel
- Would connect to bicycle & pedestrian facilities on south side if constructed with Concept 1

Basic Roadway Geometry & Right of Way (ROW):
- Can be constructed within the existing ROW
- Pathway approximately 1,000' long, with a typical width of 10'
- Minimal excavation required because of the existing terrain

Environmental & Land Use:
- South Umpqua River is riparian corridor with aquatic habitat, wildlife habitat, and wetlands
- Existing area underneath the bridges is already heavily disturbed

Cost Opinion:
- $450,000

Concept 4 – Construct sidewalks with curb and gutter along length of Grange Rd

Purpose: Provide parallel route to OR 42 for bicyclists and pedestrians

Description: Construct sidewalks with curb and gutter along length of Grange Rd

Traffic Operations & Safety:
- Buffered sidewalks improve safety of pedestrians
- Reduces need for pedestrians &bicyclist to cross the highway
- Slower adjacent traffic volumes
- Most parcels on the south side of OR 42 take access from Grange Rd
- Slight increase in travel distance for through traffic

Basic Roadway Geometry & Right of Way (ROW):
- Currently no pedestrian facilities along Grange Rd
- Could be constructed within the available ROW
- Includes illumination for the new facilities along Grange Rd
- 6' wide sidewalks included on both sides of the Roadway
- Roadway assumed to have shared lanes for bicycles & vehicles

Environmental & Land Use:
- Drainage assumed with the sidewalk installation.
- No anticipated environmental or land use impacts.

Cost Opinion:
- $5.5 million

Concept 5 – Provide a park and ride facility that coordinates with adjacent bus stop

Purpose: Improve transit facilities

Description: Provide a park and ride facility that coordinates with the adjacent bus stop

Traffic Operations & Safety:
- Facilitates connections with South County Route 99, Winston Commuter Route, and carpooling.
- Access limited to right-in and right-out

Basic Roadway Geometry & Right of Way (ROW):
- Could be constructed within the available ROW
- Approximately 75 to 125 parking spaces
- Access limited to right-in and right-out

Environmental & Land Use:
- No environmental resource impacts
- Would require modified use of existing ODOT property

Cost Opinion:
- $1.0 million

Concept 6 – Relocate Lookingglass Rd to connect at 4-way intersection

Purpose: Improve operations and safety

Description: Close current connection & relocate Lookingglass Rd to connect at 4-way intersection with traffic signal
- Option A: Extend Lookingglass Rd east to Pepsi Rd
- Option B: Extend Lookingglass Rd east to Umpqua Safari with potential Pepsi Rd extension to west
- Option C: Close or limit Lookingglass to right-in only and realign with Brosi Orchard Rd

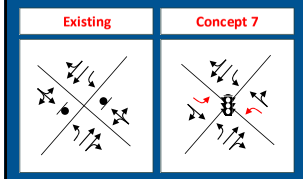
Traffic Operations & Safety:
- Option A: Reduces delays & improves safety for side-street left turns but increases delays for mainline through
- Option B: Same as Option A
- Option C: Same as Option A but greater increases in delays for mainline stopping on incline

Basic Roadway Geometry & Right of Way (ROW):
- All options primarily outside existing ROW
- Option A: 2,100' new roadway with of new culvert and bridge
- Option B: 1,000 new roadway on north side and 1,100' on south side with new bridge & culvert
- Option C: 600' new roadway connecting at skewed intersection with a steeper grade than current approach

Environmental & Land Use:
- All options require acquisition of ROW
- Option A: Impacts two homes on the north side
- Options A & B: Interacts with floodway & 100-year floodplain
- Option C: Impacts existing structure but no environmental impacts

Cost Opinions:
- Option A: $5.5 million
- Option B: $3.8 million
- Option C: $1.5 million

Concept 7 – Signalize Rolling Hills Rd



Existing Lane Configuration
Concept Lane Configuration

Purpose: Improve operations and safety

Description: Signalize intersection (Should be considered in conjunction with Concepts 13, 14, and 16)

Traffic Operations & Safety:
- Preliminary signal warrants are not currently met
- Warrants would likely be met with Rolling Hills extension and other local connectivity improvements with access restrictions
- Reduced delay and improved safety for side-streets
- Increased delays for mainline through traffic

Basic Roadway Geometry & Right of Way (ROW):
- 16 crashes reported at Rolling Hills Rd intersection
- Signalization of Rolling Hills Rd can occur within existing ROW
- Should be considered with local system enhancements and access control in Concepts 13, 14, and 16

Environmental & Land Use:
- No environmental resource or land use impacts

Cost Opinion:
- $500,000 for signal improvements
- Local connectivity costs are not included in estimate

Concepts 8-10 – Add right-turn deceleration lanes

Purpose: Address existing safety concerns and decrease delay

Description: Add right-turn deceleration lanes on OR 42:
- Eastbound and westbound at Rolling Hills Rd
- Westbound at Landers Ave
- Eastbound and westbound at Emils Way/Grange Rd

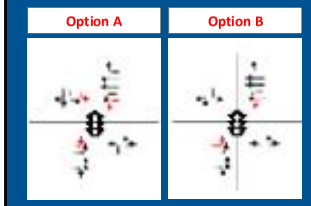
Traffic Operations & Safety:
- Right-turn deceleration lanes allow deceleration in a lane separated from high-speed through traffic → improved safety
- Some operational benefits with separated right turns
- One serious injury crash reported involving right-turn at Landers Ave

Basic Roadway Geometry & Right of Way (ROW):
- Can be accommodated within existing ROW
- Modifies corners of intersection to provide deceleration lane
- Adjacent drainage and multiuse path would need to be shifted to north
- Lighting for intersection is included

Environmental & Land Use:
- No land use or environmental impacts anticipated

Cost Opinions:
- $250,000 per deceleration lane

Concept 11 (without Rolling Hills Rd Extension) – Increase intersection capacity



Existing Lane Configuration
Concept Lane Configuration

Purpose: Improve operations and safety

Description: Increase intersection capacity to meet forecast demand
- Option A: Install dual left turns on eastbound, westbound, and southbound approaches
- Option B: Install dual left turns for eastbound and westbound approaches

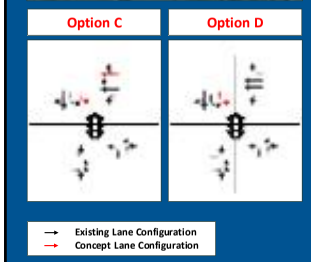
Traffic Operations & Safety:
- Top 10% of Safety Priority Index System and 39 crashes in 6-year period
- Each option would provide protected left turns for all approaches
- Option A: Forecast v/c ratio of 0.81 (just exceeds OHP target of 0.80)
- Option B: Forecast v/c ratio of 0.84 (exceeds OHP target)

Basic Roadway Geometry & Right of Way (ROW):
- Widening OR 42 would occur on both sides of roadway for left-turn lanes
- Widening on Carnes and Roberts Creek Rd would occur on east side to minimize impacts
- More widening on Carnes Rd with Option A than Option B
- All options would involve ROW impacts – more with Option A than B

Environmental & Land Use:
- Impacts adjacent properties for each of the proposed options
- Only Option B avoids impacts to existing structures
- No environmental resource impacts

Cost Opinions: No estimates include ROW costs
- Option A: $3.1 million
- Option B: $2.8 million

Concept 11 (with Rolling Hills Rd Extension) – Increase intersection capacity



Purpose: Improve operations and safety

Description: Increase intersection capacity to meet forecast demand
- Option C: Install dual left turns on southbound approach & convert the westbound right-turn lane into a shared through/right
- Option D: Install dual left turns on southbound approach

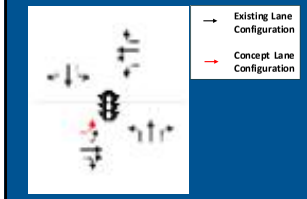
Traffic Operations & Safety:
- Top 10% of Safety Priority Index System and 39 crashes in 6-year period
- Each option would provide protected left turns for all approaches
- Option C: Forecast v/c ratio of 0.78 (meets OHP target of 0.80)
- Option D: Forecast v/c ratio of 0.86 (exceeds OHP target)

Basic Roadway Geometry & Right of Way (ROW):
- Widening on Carnes and Roberts Creek Rd would occur on east side to minimize impacts
- Option C: Extends third westbound through lane almost 2,000'
- All options would involve ROW impacts – Option D has fewest

Environmental & Land Use:
- Impacts to adjacent properties for each of the proposed options
- Only Option B would avoid impacts to existing structures.
- No environmental resource impacts

Cost Opinions: No estimates include ROW costs
- Option C: $2.1 million
- Option D: $1.3 million

Concept 12 – Increase intersection capacity and modify signal timing at OR 99/Grant Smith Rd



Purpose: Improve operations and safety

Description: Installing dual left turns on eastbound approach & modify traffic signal to provide protected left turns on all approaches

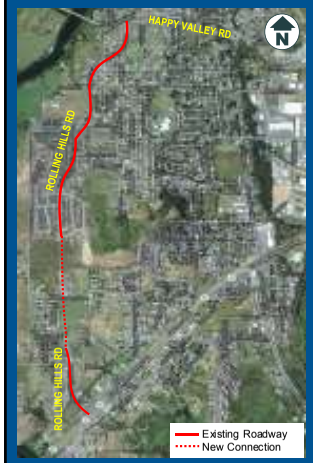
Traffic Operations & Safety:
- 44 crashes during 6-year study period
- Forecast v/c ratio of 0.80 (just meets OHP target of 0.80)
- Provide protected left turns for all approaches

Basic Roadway Geometry & Right of Way (ROW):
- Widen OR 42 to facilitate dual left-turn lanes
- Widen OR 99 to for additional receiving lane
- Impacts ROW in northwest, northeast, and southwest quadrants

Environmental & Land Use:
- Impacts adjacent properties but would not existing structures
- No environmental resource impacts

Cost Opinions:
- $1.0 million
- Does not include ROW costs

Concept 13 – Extend Rolling Hills Rd to connect with Happy Valley Rd



Purpose: Improved connectivity

Description: Extend Rolling Hills Rd to connect with Happy Valley Rd (Should be considered in conjunction with Concept 7)

Traffic Operations & Safety:
- Relieves demand on capacity-constrained Carnes Rd
- Higher demand at OR 42 would likely warrant traffic signal (Concept 7)

Basic Roadway Geometry & Right of Way (ROW):
- Would involve ROW impacts
- 2,400' of additional roadway, primarily outside of existing ROW
- Would meet collector street design standards

Environmental & Land Use:
- Involves property impacts but could avoid impacts to existing structures
- No environmental resource impacts

Cost Opinions:
- $3.5 million
- Does not include ROW costs

Concept 14 – Reduce turning conflicts at OR 42 at Emils Way/ Grange Rd

Purpose: Enhance safety for all users

Description: Reduce turning conflicts (Should be considered in conjunction with Concepts 15 and 18)
- Option A: Restrict traffic movements turning onto OR 42 to right turn only but allow both right and left turns from OR 42 onto the side streets.
- Option B: Restrict all traffic movements to right turns only

Traffic Operations & Safety:
- 12 crashes during a 6-year study period including one fatality (about half of turning crashes involved left turns from side street to OR 42)
- Option A: Eliminates some of the turning-related conflicts
- Option B: Eliminates all of the left turning-related conflicts

Basic Roadway Geometry & Right of Way (ROW):
- Option A: Raised median with turn lanes may require widening within existing ROW and drainage relocation would need to occur
- Option B: Raised median could be installed within the existing ROW

Environmental & Land Use:
- Accessibility to local businesses would be affected – more impacts with Option B than Option A
- Drainage relocation would need to occur

Cost Opinions:
- Option A: $1.3 million
- Option B: $300,000

Concept 15 – Create new road connection from the east end of Grange Rd to Roberts Creek Rd

Purpose: Provide alternative access to facilitate access management along OR 42

Description: Create new connection from Grange Rd to Roberts Creek Rd (Should be considered with Concept 14)
- Option A: Extend Grange Rd east to Brittney Ave
- Option B: Extend Grange Rd east to Tannhauser Ave

Traffic Operations & Safety:
- Option A: Adds traffic to Brittney Rd
- Option B: Connection opposite Tannhauser Ave more than 500' from signal at OR 42
- Option B: More direct to Roberts Creek Rd than Option A
- Option B: No added traffic on local streets

Basic Roadway Geometry & Right of Way (ROW):
- Includes 12' travel lanes, 8' shoulders, and 6' sidewalks
- Both extensions would require additional ROW
- Option A: 1,200' of new roadway
- Option A: Mostly uses existing but unimproved ROW from Brittany Ave to Grange Rd but additional ROW would still be required.
- Option B: 1,600' new roadway primarily outside of the existing ROW

Environmental & Land Use:
- Option A: Rerouted traffic to Brittney Ave travel past residences and school
- Option B: Impacts an existing structure
- Option B: Consistent with long-term Douglas County plans.

Cost Opinions:
- Neither option includes ROW costs
- Option A: $2.1 million
- Option B: $2.5 million

Concept 16 – Improve local connectivity and modify access to OR 42 from Rolling Hills Rd to Landers Ave

Purpose: Improved connectivity and alternative access

Description: Improve local connectivity and modify access to OR 42 from Rolling Hills Rd to Landers Ave, including connections between Melody Lane, Stella Street, Depriest Street, and Circle Drive

Traffic Operations & Safety:
- 7 crashes reported in segment between Rolling Hills Rd and Landers Ave
- 7 crashes reported at Landers Ave
- Improves safety along the expressway by directing turning vehicles to targeted and signalized locations where they can be accommodated with lesser crash risk
- Traffic patterns would change on local streets

Basic Roadway Geometry & Right of Way (ROW):
- Proposed connections would meet Douglas County local road standards
- Additional ROW would be required
- Some of these connections have been shown in approved development plans but have not yet been constructed

Environmental & Land Use:
- Some alignments may have impacts on existing residential structures
- Traffic volumes would be higher on some local streets
- No environmental impacts with this concept

Cost Opinions: Costs would be dependent upon chosen alignments

Concept 17 – Control access at Winery Lane

Existing Roadway
Concept Option

Purpose: Enhance safety for all users

Description: Control access at Winery Ln
- Option A: Create connection to Grant Smith Rd & close access to OR 42
- Option B: Limit access at OR 42 to right-in/right-out & provide U-turn opportunities

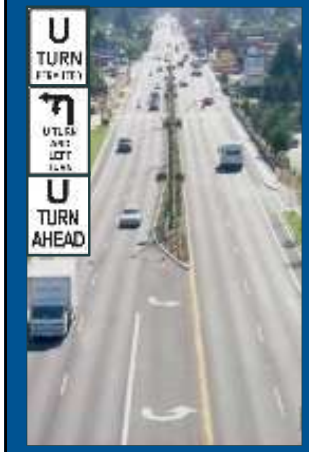
Traffic Operations & Safety:
- Option A: Diverts Winery Lane traffic to Grant Smith Rd with minimal impact on signalized intersection operations
- Option A: Closure of Winery Lane eliminates potential crashes associated with unsignalized intersections
- Option B: Converts all turning movements to right turns only
- Option B: Drivers can use alternative routes or make U-turns on OR 42

Basic Roadway Geometry & Right of Way (ROW):
- Option A: Douglas County local road standards – 11' lanes & 3' shoulders
- Option A: Requires additional ROW
- Option B: Include raised median within the existing ROW – no widening

Environmental & Land Use:
- Option A: Additional ROW required from adjacent property owners
- Option B: Drivers inconvenience by the turn restrictions could impact businesses

Cost Opinions:
- Option A: $600,000 excluding ROW acquistion
- Option B: $100,000

Concept 18 – Provide U-Turn opportunities at key locations along OR 42



Purpose: Supplement intersection closures and right-in/right-out only movements

Description: Provide U-Turn Opportunities at Key Locations along OR 42

Traffic Operations & Safety:
- U-turns instead of direct left turns can reduce the frequency of all crashes by approximately 20 percent
- Delay will increase slightly for left-turns from side-streets as a result of out-of-direction travel

Basic Roadway Geometry & Right of Way (ROW):
- Raised concrete medians or paint can be used to demarcate U-turn locations within the existing medians and ROW

Environmental & Land Use:
- This concept would not have environmental or land use impacts

Cost Opinions:
- $100,000 per locations
- Assumes raised concrete medians are chosen

Next Steps

- Analysis of modified or additional concepts
- Selection of preferred concepts
- Development of draft Expressway Management Plan

OR 42 Expressway Management Plan
Technical Advisory Committee

Meeting #3

10:00 AM to 12:00 PM

January 10, 2013

ODOT Region 3 Offices
3500 NW Stewart Parkway
Roseburg, OR 97470

AGENDA

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1. Introductions — Thomas Guevara, ODOT

2. Draft Corridor Plan — Jennifer Danziger, DEA; Joshan Rohani, DEA
   - Organization
   - Recommended Improvements
   - Access Management
   - Other Management Actions

3. Open Discussion — All
   - Final recommendations for EMP
   - Project Priorities

4. Next Steps — Thomas Guevara, ODOT

Filename: OR42 TAC3 Agenda 01-09-2013.docx

OR 42 Expressway Management Plan
Technical Advisory Committee (TAC)

Meeting #3

10:00 AM to 12:00 PM

January 10, 2013

ODOT Region 3 Offices
3500 NW Stewart Parkway
Roseburg, OR 97470

Meeting Notes

Attendees: See Attached List

Introductions

Thomas Guevara opened the third Technical Advisory Committee (TAC) meeting with a round of introductions, where each person in attendance stated their name and community or agency they were representing. He introduced himself as the ODOT project manager and identified the consultant team. Then he provided an overview of the Draft OR 42 Expressway Management Plan and indicated that the review period will end on March 1st, when all comments should be submitted to him.

Update on Project Status

Jennifer Danziger, the Consultant project manager, provided the group with a schedule update, an overview of work completed, and a review of the project goals.

Draft Plan

Jennifer also provided the group with a summary of the draft plan layout and content:

- Introduction
- Evaluation of Baseline Conditions
- Summary of Expressway Deficiencies
- EMP Improvements
- Expressway Access Management Plan
- Other Management Actions
- Plan Monitoring and Funding

Joshan Rohani, the Consultant Transportation Engineer, then led the group through the list of 18 recommended projects associated with the expressway and local system. Then he provided an overview of the access management plan for the OR 42 corridor, followed by a summary of transportation system management (TSM), and transportation demand management (TDM) improvements.

Discussion

Joshan Rohani and Jennifer Danziger facilitated the discussion of each of the recommended improvements as well as review of the access management plan. Comments and questions regarding each of the proposed concepts are shown in italics below:

- **Concept 1 – Lookingglass Rd to Winston Section Rd – Add Multi-use path on South Side of OR 42**
    - *No comments – general support.*
- **Concept 2 – Winston Section Rd – Multi-Use Undercrossing**
    - *The group discussed the area around the underpass, and alternatives for providing an improved eastbound river crossing for bicycles and pedestrians.*
        - *First, consideration was given to the bridge across the river – could a multi-use crossing be hung from the steel bridge? The group felt that was unlikely.*
        - *Second, could a second bridge be built and connect to Grange? This option would be costly and not likely fundable.*
        - *The group direction was to not add either of these new options; rather, they supported Concept #2 as it is, with a future opportunity for pedestrians and bicycles to cross again at Rolling Hills Road.*
- **Concept 3 – OR 42/Rolling Hills Rd: Install Traffic Signal & Frontage Rd Connecting to Jackie Ln**
    - *Referencing page 81 of the Green Circulation Plan, and page 4-22 of the Douglas County TSP, the group discussed modifying the image shown in the OR 42 plan to better represent what is currently planned. This would include improvement of Harmony Drive as the "frontage road" connecting Rolling Hills Road to Jackie Lane.*
    - *General support.*
- **Concept 4 – OR 42/Rolling Hills Rd: Add Eastbound and Westbound Right-turn Deceleration Lanes**
    - *This would need to be designed for appropriate turning speeds.*
    - *There are driveways within close proximity of OR 42 and Rolling Hills Road that would need to be considered during design.*
    - *The group discussed the comment raised by the CAC – "Is there a way to extend the striped left-turn bay, in the eastbound direction, within the two-way-left-turn lane so that drivers have more room to decelerate?" ODOT staff suggested that this may be a short-term improvement that can be made outside of this plan.*
    - *General support.*
- **Concept 5 – East of Rolling Hills Rd through Landers Ave: Add Raised Barrier**
    - *May not need barrier to go past Landers because of access control. Leave in the Plan as is, to allow flexibility, but consider shortening during design.*
    - *Need to reference ORS 366 to highlight truck requirements, and identify necessary design exceptions and get them processed.*

    - *U-turns may be needed with access restrictions (See TSM improvements in PowerPoint presentation).*
    - *General support.*
- **Concept 6 – Install Roadway Lighting at Key Locations**
    - *Pedestrians also cross at Emils and Grange; is lighting adequate at these locations?*
    - *The separate lighting at Rolling Hills would not be needed if lighting is included with the Signal installation.*
    - *General support.*
- **Concept 7 – OR 42/Landers Ave: Add Westbound Right-turn Deceleration Lane**
    - *Update figures to show consistent levels of detail (each concept should only show the improvements associated with that concept).*
    - *Would need to be coordinated with Concept 11.*
    - *General support.*
- **Concepts 8 – OR 42/Emils Way/Grange Rd: Add Raised Median**
    - *Some concern was expressed regarding how local traffic would respond to out-of-direction travel for U-turns after barrier is installed. It was decided that the potential for reducing crash frequency and severity would outweigh this concern.*
    - *Update milepoints on project sheet. Also, one of the fatal crashes is incorrectly recorded at the Carnes intersection but actually occurred at this location.*
    - *Suggested adding barrier to project sheet images for Concepts 7 and 8, or removing in all.*
    - *Group confirmed their support for raised median/barrier. Need to confirm if a low-profile median is appropriate, or if a raised barrier would be required (difficult to design with left turns permitted from OR 42).*
- **Concepts 9 – OR 42/Emils Way/Grange Rd: Add Eastbound and Westbound Right-turn Deceleration Lane**
    - *Would need to be coordinated with Concept 11.*
    - *General support.*
- **Concepts 10 – OR 42/Carnes Rd/Roberts Creek Rd: Add Second Southbound Left-turn Lane**
    - *Scenario assumes Rolling Hills is connected/extends.*
    - *Would require design exception to not meet Highway Design Manual (HDM) standards. Revise priority to have the first phase include westbound lanes (#11), which has less of a right-of-way impact than a second SBL turn lane (#10).*
    - *Add Carnes Rd to description.*
    - *General support as second phase.*
- **Concept 11 – OR 42/Carnes Rd/Roberts Creek Rd: Add Third Westbound Through Lane**
    - *Would need to be coordinated with Concepts 7 and 9.*
    - *See comment for Concept 10 (Concept 11 – Phase 1, Concept 10 – Phase 2).*

- *The group requested the v/c be shown without Concept 10 for comparison to support phasing priorities at this intersection.*
- *The change in forecast volumes (based on new Roseburg growth rates) was discussed. Need to verify the improvements required based on revised forecasts.*
- *General support*

- **Concept 12 – OR 42/Winery Ln: Add Raised Barrier to Restrict Turns to Right-in/Right-out**
  - *The group discussed extending barrier to milepoint 76.02 (onto Railroad Bridge).*
  - *The group agreed to add a project sheet for Art Mill (it will be identified as a low priority improvement that is triggered by development or safety).*
  - *Need to confirm where the residence/business opposite Winery has access to OR 99 and/or OR 42.*
  - *Winery Lane is an ODOT facility, and would be an ODOT project.*
  - *General support.*
- **Concept 13 – 42/OR 99/Grant Smith Rd: Add Second Eastbound Left-Turn Lane**
  - *Need to verify the improvements required based on revised forecasts.*
  - *Consider an alternative mobility standard if lower forecasts don't reduce the v/c below the OHP operational threshold.*
  - *General support.*
- **Concept 14 – Lookingglass Rd and Pepsi Rd: Realign to Create 4-way Signalized Intersection**
  - *Verify ownership of land and identify any land-use or environmental impacts.*
  - *General support, although this concept is expensive, while being a low priority.*
- **Concept 15 – Rolling Hills Rd: Extend Northward to Connect with Happy Valley Rd**
  - *Show Jackie connection on figure.*
- **Concept 16 – Local Network Connections: Improve Connectivity between Melody Ln, Stella St, Depriest St, Circle Dr. & Chandler Dr**
  - *Group suggested that the OR 42 Plan combine this concept with the Rolling Hills extension and just have local connectivity concept.*
  - *Add extension from Stella/Melody to the west. See page 15-34 and Map C-1 of the Douglas County TSP.*
- **Concept 17 – Grange Rd: Create New Connection from East End of Grange Rd to Roberts Creek Rd**
  - *Show both connectivity options (Brittney and Tannhauser) instead of just Tannhauser connection. The Brittney connection is what the County has been planning.*
- **Concept 18 – Winery Ln: Extend Grants Smith Rd & Close Existing Access to OR 42**
  - *There are two alignments shown for the Winery Lane connection to Grant Smith Road; the option that travels along OR 42 frontage won't work due to the grade. Only show the other platted option.*

Next Steps

Additional comments on concepts and memo are due back to Thomas Guevara by March 1, 2013. DEA will take comments from the advisory committees and open house, and incorporate them into the final Expressway Management Plan.

Attachments:
Attendance Sheet
Agenda
PowerPoint Presentation

OR 42 Expressway Management Plan

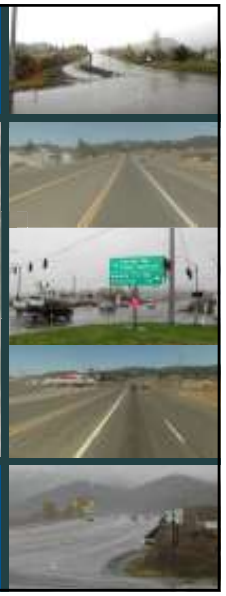
Technical Advisory Committee (TAC)

Name	Agency	Phone No.	E-Mail
Thomas Guevara Jr.	ODOT Project Manager	541-957-3692	Thomas.Guevara@odot.state.or.us
Jennifer Danziger JD	DEA Project Manager	503-499-0381	Jed@deainc.com
Joshan Rohani JR	DEA Traffic Engineer	503-499-0259	Jwr@deainc.com
Ed Moore	DLCD	971-239-9454	ed.w.moore@state.or.us
~~John Boyd~~ KEITH CUBIC	Douglas County Planning	541-440-4289	jjboyd@co.douglas.or.us
Mike Luttrell	Douglas County Public Works	541-440-4481	kmluttre@co.douglas.or.us
Jennifer Sikes	City of Winston Public Works	541-679-6114	jennifer.sikes@winstoncity.org
Rick Patton	City of Winston Public Works	541-679-6114	rick.patton@winstoncity.org
Tonya Theiss-Skrip	Cow Creek Tribe of Indians	541-677-5537	ttheiss@cowcreek.com
ODOT Resources			
Scott Adams	ODOT Local Gov't Liaison	541-957-3636	Scott.Adams@odot.state.or.us
Pete Castro	ODOT GeoTech	541-957-3603	Pete.T.Castro@odot.state.or.us
Jim Collins	ODOT Environmental	541-957-3595	James.D.Collins@odot.state.or.us
Leslie Elbon	ODOT Motor Carrier	541-776-6004	Leslie.A.Elbon@odot.state.or.us
Bob Grubbs	ODOT Bridge	541-957-3579	Robert.E.Grubbs@odot.state.or.us
Roxanne Hanneman	ODOT R/W	541-957-3556	Roxanne.M.Hanneman@odot.state.or.us
Ronald Hughes	ODOT Access Management	541-957-3696	Ronald.H.Hughes@odot.state.or.us
Robin Marshburn	ODOT Freight	503-986-3696	Robin.L.Marshburn@odot.state.or.us
Michael Morris	ODOT Roadway	541-774-6370	Michael.L.Morris@odot.state.or.us
John Oltman	ODOT Traffic Engineer	541-957-3539	John.W.Oltman@odot.state.or.us
Jarvis Pennington	ODOT District 7	541-957-3666	Jarvis.G.Pennington@odot.state.or.us
Bob Sechler	ODOT Traffic Investigator	541-957-3541	Robert.A.Sechler@odot.state.or.us
Peter Schuytema	ODOT TPAU	503-986-4110	Peter.L.Schuytema@odot.state.or.us
Joe Thomas	ODOT Survey	541-774-6357	Joseph.R.Thomas@odot.state.or.us

CHRIS HUNTER CH. ODOT DIST. 7 541-957-3689

OR 42 Expressway Management Plan (EMP)

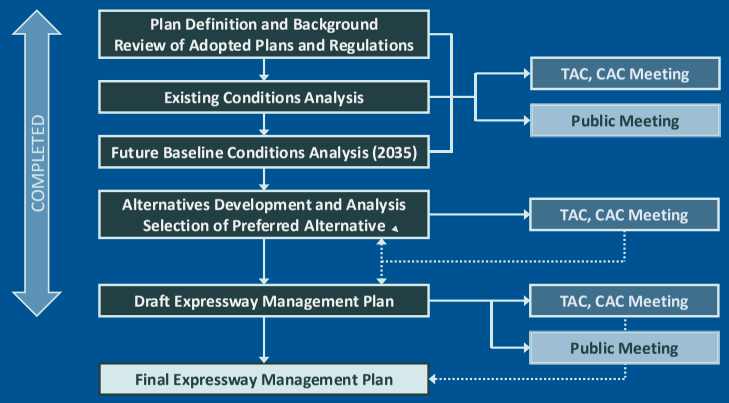
Technical Advisory Committee
Meeting #3 – January 10, 2013



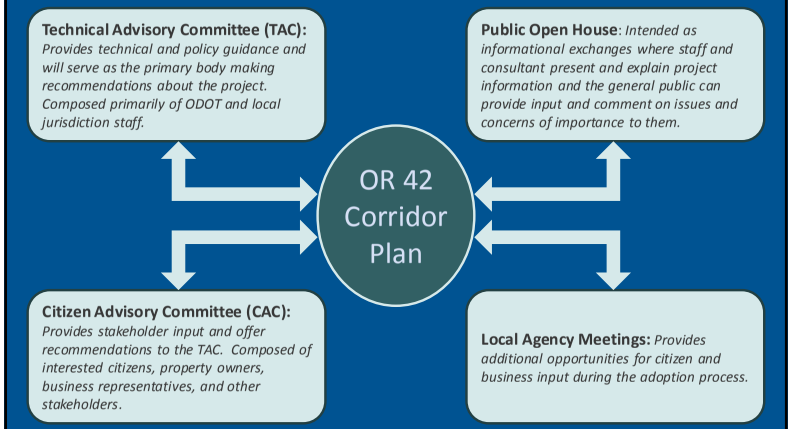
Presentation Topics

1. Draft Plan
   - Organization
   - Recommended Improvements
   - Access Management
   - Other Management Actions
2. Discussion
   - Final recommendations for EMP
   - Project Priorities
3. Next Steps

EMP Planning Process



Public Involvement Process



EMP Goals

The goals of this EMP are to develop a plan for improvements that can be implemented over time to:

- Improve safety and operations of the expressway corridor for all modes of travel.
- Upgrade the corridor to meet Expressway standards.
- Facilitate freight travel by maintaining efficient through movement in the corridor.
- Provide better accessibility to Roseburg, Winston, and the Green Area consistent with the adopted local comprehensive land use and transportation plans

Draft Plan Organization

VOLUME 1

1. INTRODUCTION
2. EVALUATION OF BASELINE CONDITIONS
3. SUMMARY OF EXPRESSWAY DEFICIENCIES
4. EMP IMPROVEMENTS
5. EXPRESSWAY ACCESS MANAGEMENT PLAN
6. OTHER MANAGEMENT ACTIONS
7. PLAN MONITORING AND FUNDING

VOLUME 2

- Technical material
- Detailed process documentation
- Summary of Public Outreach

EMP Improvements

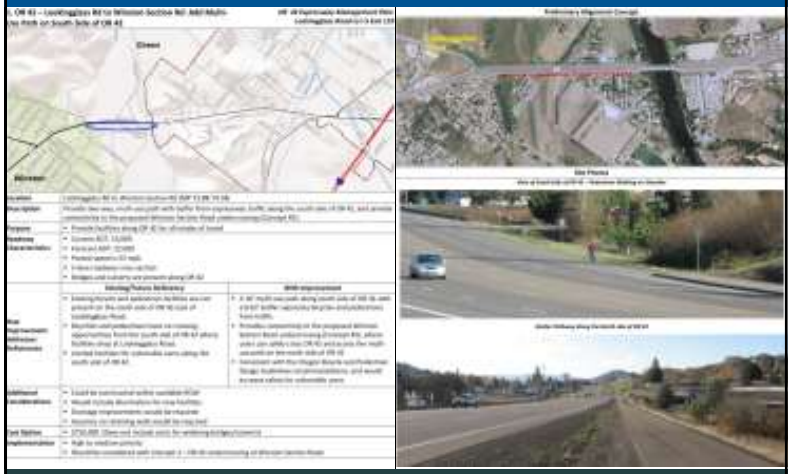
- EMP Improvements
  - 13 Expressway Improvements
  - 5 Local System Improvements
  - 6 Other Improvements
    - Transportation System Management
    - Transportation Demand Management
- Summary Table
  - Description
  - Implementation (Priority, Triggers)
  - General Funding Categories

EMP Improvements

- Project Sheets
  - 18 prepared
    - Expressway and Local System Improvements
  - Generally two pages
    - Page 1 – Descriptive
    - Page 2 – Illustrative

EMP Improvements

EMP Project 1



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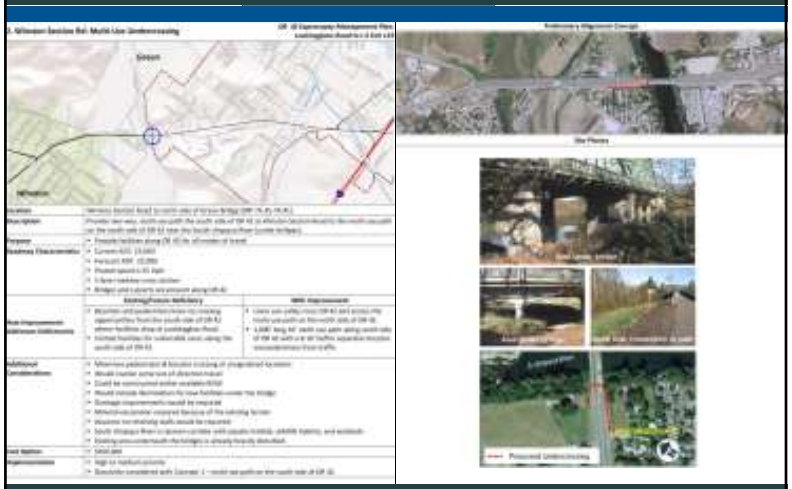

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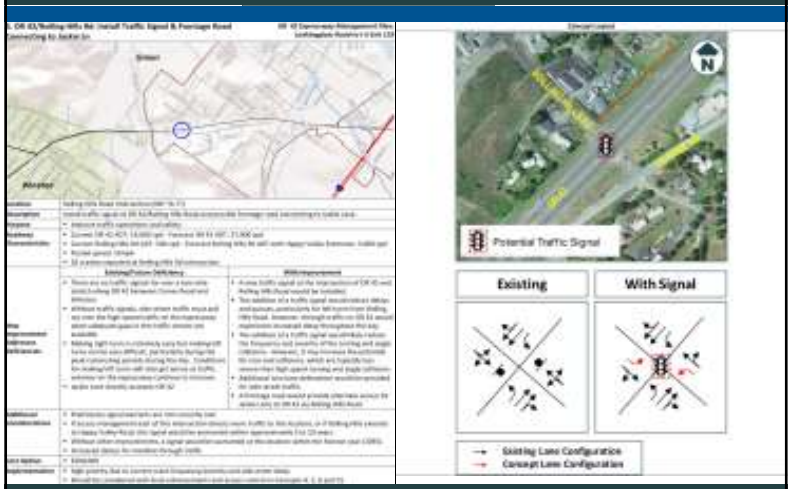
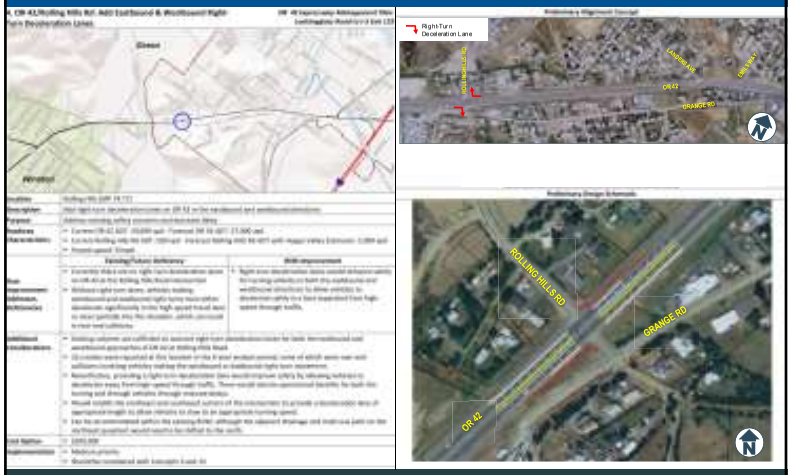
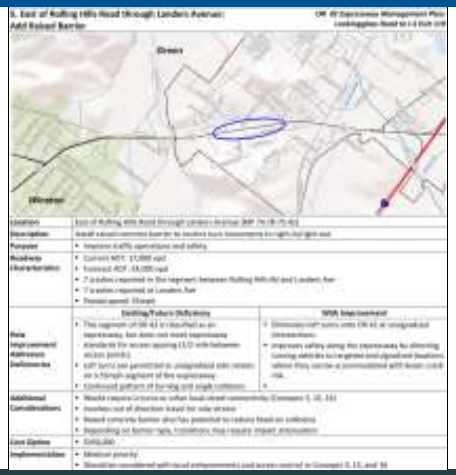


EMP Project 4



EMP Project 5



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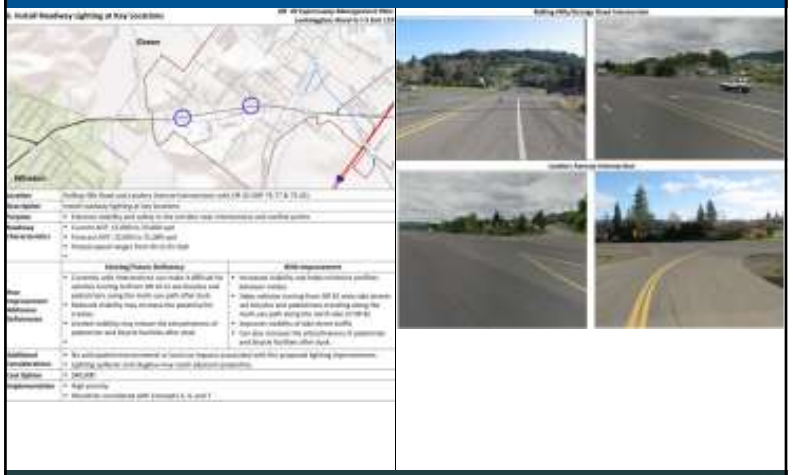
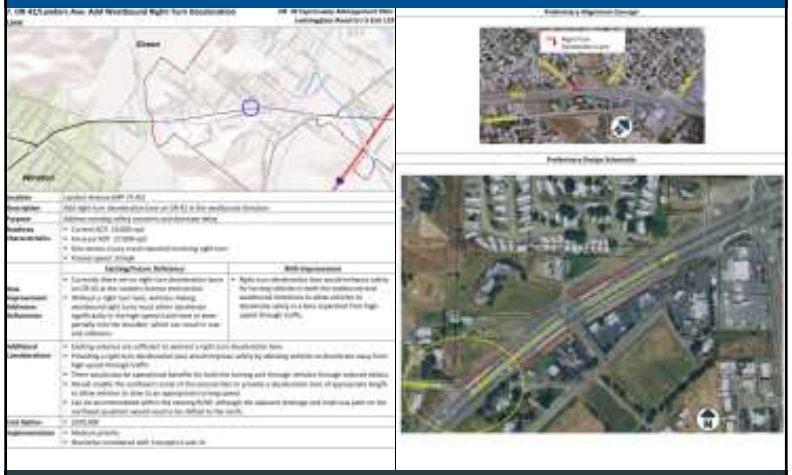
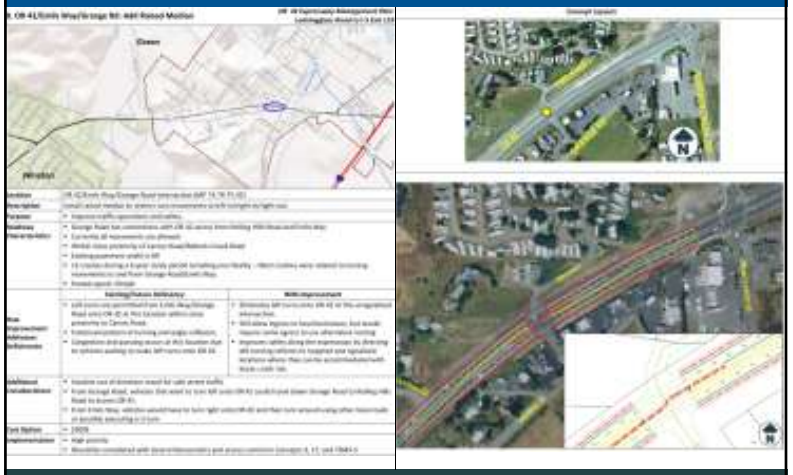


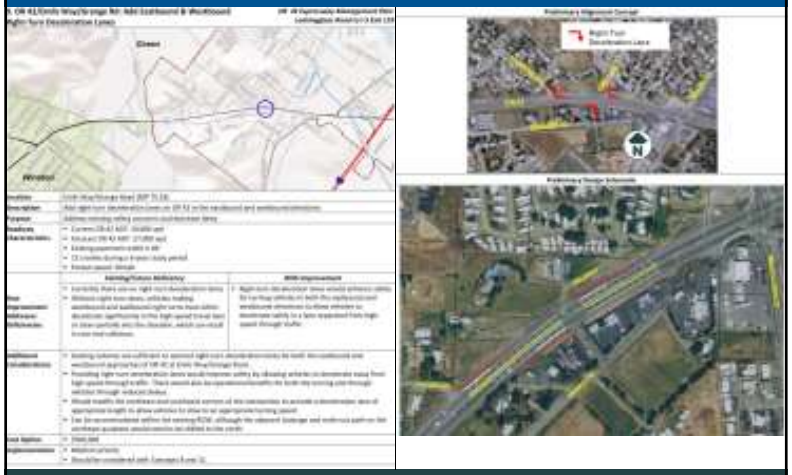
EMP Project 7



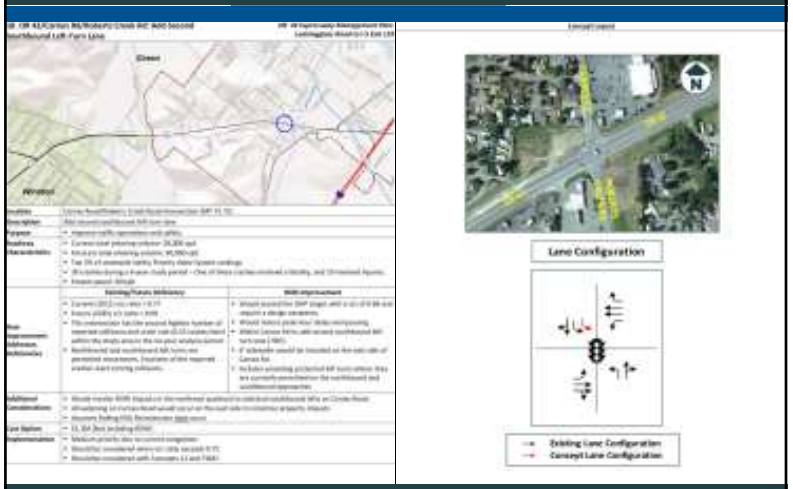
EMP Project 8



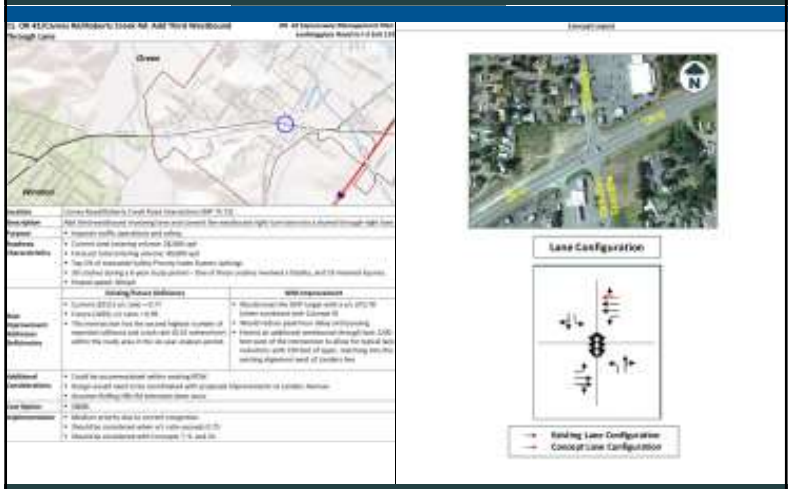
EMP Project 9



EMP Project 10

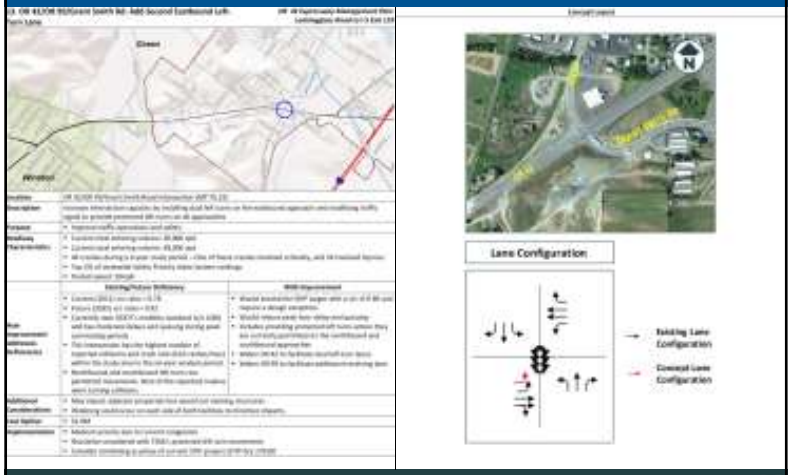


EMP Project 11

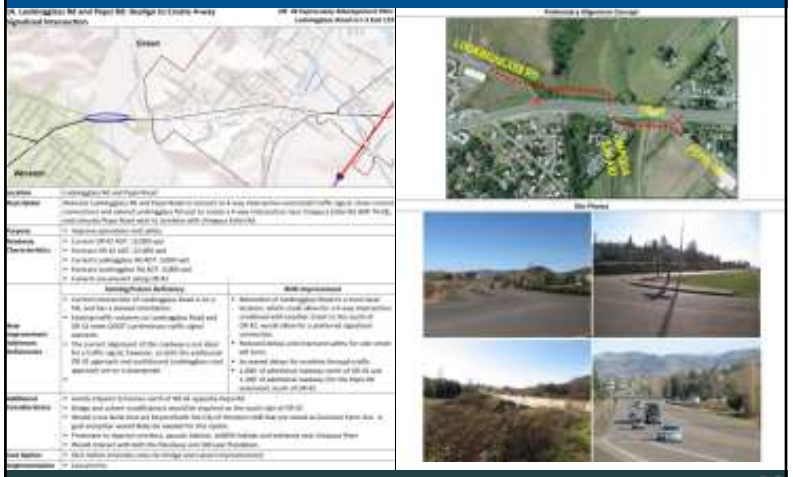


EMP Project Sheet 12

EMP Project 13



EMP Project 14



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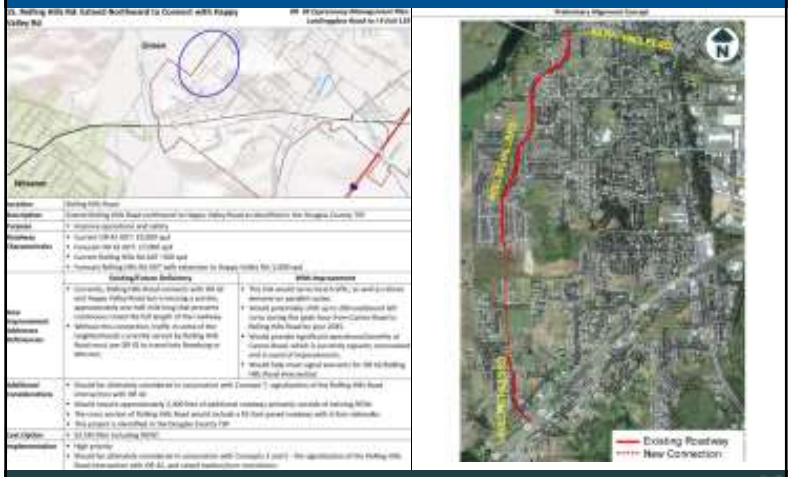
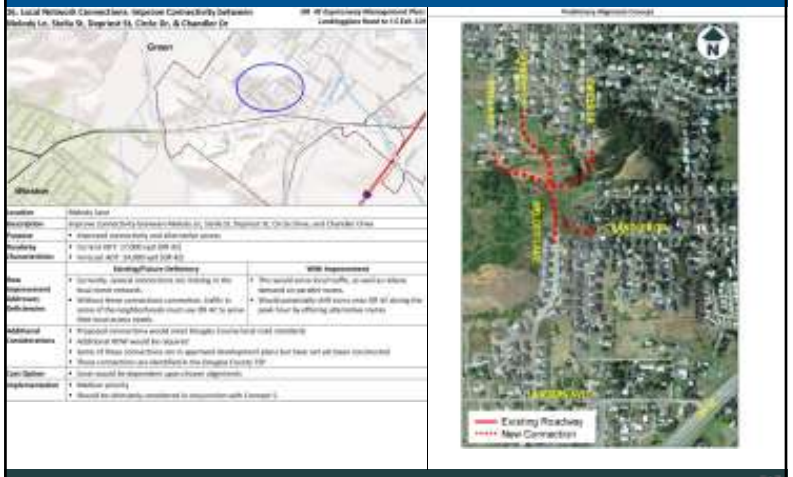
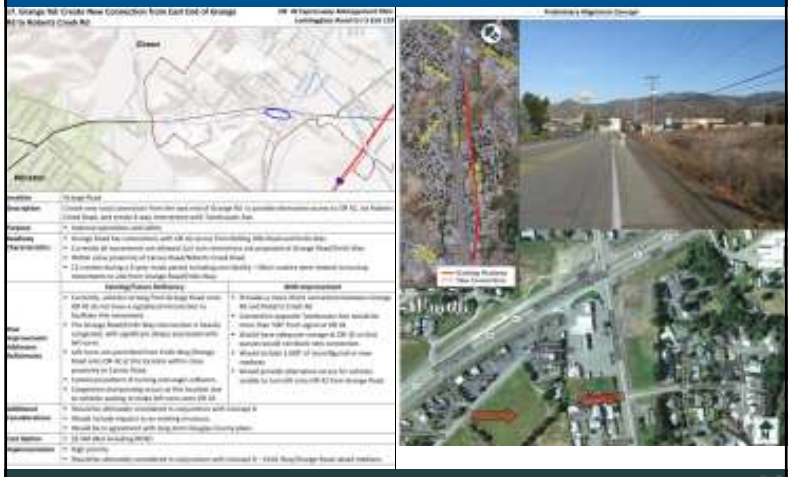


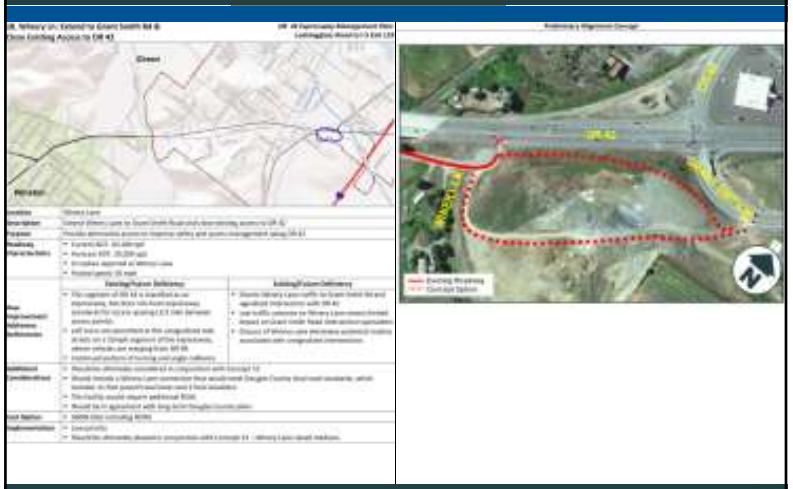
EMP Project 16



EMP Project 17



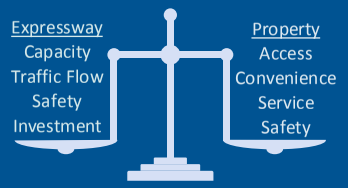
EMP Project 18



Next Steps

- Analysis of modified or additional concepts
- Selection of preferred concepts
- Development of draft Expressway Management Plan

Access Management Plan (AMP)



- Access Management Standards
  - Standards in plan will be adopted by the Oregon Transportation Commission
- Access Management Actions
  - Access management would happen when:
    - Applications for land use changes or development are submitted
    - Future highway improvement projects move into design and construction
    - Safety and/or operational problems arise

Private Approaches

- Standards do not apply to driveways in existence prior to January 1, 2012 except when one of the following happens:
  - A new driveway is requested or an existing driveway use is changed based on certain criteria
  - Infill development or infill redevelopment occurs
  - Where a highway or interchange project occurs
- If one of these things happen the Oregon Department of Transportation shall determine whether the approach road spacing or safety is improved by moving in the direction of the appropriate spacing standards

Expressway Access Management Plan

Transportation System Management

- Traffic Signal Timing Modifications

  To address existing safety issues at the two signalized intersections (Carnes Road/Roberts Creek Road and OR 99/Grant Smith Road):
  - Provide protected left-turn phases in the north-south direction
  - Add clearance intervals for appropriate traffic phases in the north-south direction
- Permitted U-Turns

  In conjunction with the construction of medians to restrict turning movements, the following signal modifications are recommended at the Carnes Road/Roberts Creek Road and OR 99/ Grant Smith Road intersections:
  - Permit U-turns for passenger vehicles with protected left-turn arrow

Transportation Demand Management

- Bicycle and Pedestrian Facilities
  - Additional bicycle and pedestrian facilities in EMP
  - Improves connectivity and safety for these modes
  - Serves the portion of the population who rely on walking, bicycling, and transit for mobility, or choose to use such modes
- Park and Ride Facility
  - Future park-and-ride facility at the intersection of OR 42 and Carnes Road/ Robert Creek Road
    - Could take advantage of existing parking that is underutilized during the day
    - Could be part of a future shared-use development
    - Could be a standalone parking lot
  - Supports the existing Umpqua Transit bus service that travels along OR 42

OR 42/Carnes Rd/Roberts Creek Rd Potential Park-and-Ride Sites

Plan Monitoring

Project Type	Potential Locations	Monitoring
Traffic Signal	• OR 42/Rolling Hills Rd	• Monitor intersection traffic volumes to determine if traffic signal warrants are met or will soon be met • Monitor impacts of local system connectivity improvements
Other Capacity Improvements	• OR 42/Carnes Rd/Roberts Creek Rd Intersection • OR 42/OR 99/Gr • ant Smith Rd Intersection	• Monitor v/c ratios to determine if additional travel lanes are warranted • Monitor intersection traffic volumes to determine if additional left-turn lanes are warranted • Monitor crash patterns for increased frequency of crashes related to permitted left-turn movements
Right-Turn Deceleration Lanes	• OR 42/Rolling Hills Rd Intersection • OR 42/Landers Ave Intersection • OR 42/Emils Way/Grange Ro Intersection	• Monitor crash patterns for increased frequency of rear-end crashes related to right-turn movements • Monitor intersection traffic volumes to determine if right-turn lane warrants are met or will soon be met
Access Management	• OR 42/Rolling Hills Rd • OR 42 – East of Rolling Hills Rd through Landers Ave • OR 42/Emils Way/Grange Rd • OR 42/Winery Ln Intersection	• Monitor for continued pattern of turning and angle related collisions • Monitor ODOT SPIS database to identify segments with a rating in the top 10 percent. • Monitor for development
Local System Improvements	• Lookingglass Rd and Pepsi Rd • Rolling Hills Rd Extension • Melody Ln • Grange Rd • Winery Ln	• Monitor for persistent congestion and queuing on side streets • Monitor appropriate coupling with access restrictions along OR 42
Bicycle/ Pedestrian Improvements	• OR 42 - Lookingglass Rd to Winston Section Rd • OR 42/South Umpqua River Bridge/Winston Section Rd	• Current deficiency • Monitor for continued use of expressway shoulder for bicycle and pedestrian travel

Next Steps

- Review Draft OR 42 EMP
  - Review Period
- Finalize OR 42 EMP

Appendix 6-B

Citizen Advisory Committee Meeting Materials

OR 42 Expressway Managment Plan
Citizen's Advisory Committee

Meeting #1

2:00 PM to 4:00 PM

November 30, 2011

ODOT Region 3 Offices
3500 NW Stewart Parkway
Roseburg, OR 97470

AGENDA

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1. Introductions — Tom Guevara, ODOT

2. Work Completed — Jennifer Danziger, DEA; Joshan Rohani, DEA
   - Existing Conditions
   - Future Baseline Conditions
   - Draft Deficiency Matrix

3. Project Discussion — All
   - Concept Development

4. Next Steps — Jennifer Danziger, DEA; Tom Guevara, ODOT
   - Schedule
   - Upcoming meetings

Filename: OR42 CAC1 Agenda 113011.docx

OR 42 Expressway Management Plan
Citizen Advisory Committee (CAC)

Meeting #1

2:00 PM to 4:00 PM

November 30, 2011

ODOT Region 3 Offices
3500 NW Stewart Parkway
Roseburg, OR 97470

Meeting Notes

Attendees: See Attached List

Introductions

Thomas Guevara opened the first Citizen Advisory Committee (CAC) meeting with a round of introductions, where each person in attendance stated their name and community or organization they were representing. He introduced himself as the ODOT project manager and identified the consultant team.

Work Completed

Jennifer Danziger, the Consultant project manager, provided the group with a description of project, study area, planning process, and draft goals/objectives that will guide this study. These items were summarized in slides 3 through 6 and are presented in:

- Technical Memorandum #1 – Review of Plans and Policies
- Technical Memorandum #2 – Study Area Definition, Goals and Objectives

Joshan Rohani, the Consultant Traffic Engineer summarized the work that has been conducted thus far to evaluate existing and future baseline conditions. Slides 7 through 24 summarize the findings which are presented in:

- Technical Memorandum #3 – Existing Conditions
- Technical Memorandum #4 – Future Baseline (no-build) Conditions

Jennifer and Joshan summarized the list of deficiencies that have been identified through observations and analyses to date.

The following comments/questions were received during the presentation:

- There are tribal lands near Lookingglass Road and by the movie theatre.
- The possibility of creating an economic development goal was discussed by the group. *Consensus on adding this type of goal was not reached.*
- There are a lot of pedestrians crossing OR 42 between Emils Way and Carnes Road.

Project Discussion

Jennifer and Joshan opened the floor up for comments, suggestions, and concerns regarding the deficiencies summarized. The intent was to gain perspective and ideas for the next phase of the corridor project: concept development.

The following comments/questions were received during the discussion:

- It is difficult to stop at the Carnes Road signal if travelling eastbound along OR 42 at full speed, especially if operating a truck. Sight distance is limited by the hill.
- The corridor is dark in several areas. Lighting along the corridor should be considered, especially between Pepsi and Landers and around Grange Road
- Supporting freight movement is very important.
- There can be significant delays at Rolling Hills, Lookingglass, and Landers. Should we consider signals?
- We could plan to use Grange Road to carry pedestrian & bicycle traffic along the south side of OR 42.
- The west side of the "green bridge" may provide a great pedestrian undercrossing opportunity for users on the south side of OR 42 to reach the pathway.
- We should consider an extension of Grange Road east to Roberts Creek Road.
- A second southbound left-turn lane may be warranted at OR 99.
- Access control with right-in right-out options was discussed as a possible improvement at several sidestreet locations. Some limited left-in movements could also be considered.
- Can we lower the speed limits in the corridor, or are there ways of redesigning the corridor to lower travel speeds?

Next Steps

DEA will take comments from the advisory committee meetings and open house and use them to develop improvement alternatives to address deficiencies for the next phase of the project. Analysis of the concepts will be conducted; concepts evaluation and presentation will occur during the next TAC and CAC meetings which are expected to occur in late February or early March of 2012. We will provide as much notice as possible about the schedule for those meetings.

Attachments:
Attendance Sheet
Agenda
PowerPoint Presentation

Sign In Sheet

OR 42 Expressway Management Plan
Citizen Advisory Committee (CAC)
November 30, 2011

Initials	Name	Agency	Phone No.	E-Mail
TG	Thomas Guevara Jr.	ODOT Project Manager	541-957-3692	Thomas.Guevara@odot.state.or.us
	Jennifer Danziger	DEA Project Manager	503-499-0381	Jed@deainc.com
JR	Joshan Rohani	DEA Traffic Engineer	503-499-0259	Jwr@deainc.com
	Susan Morgan	Douglas County Commissioner	541-440-4202	Tina@co.douglas.or.us
CGK	Christie Glen-Knutson	Winston City Councilor	541-679-8721	Chrisglenknutson@yahoo.com
	Dan Van Slyke	Wildlife Safari	541-679-6761 X. 212	Executivedirector@wildlifesafari.net
	Tom Loomis	Pepsi Co.	541-784-2524	Tloomis@pepsiroseburg.com
VC	Valynn Currie	Currieco Real Estate	541-430-0195	Vcurrie223@aol.com
CB	Chris Baker	RFP	541-784-4501	Chrisb@rfpco.com
	Dave Ewert	New Hope Church	541-817-6447	Newhope.pastordave@gmail.com
PC	Pete Carhart	Knife River Materials	541-784-2216	Pete.Carhart@kniferiver.com
BB	Brant Boyer	Terrain Tamers	503-341-0238	Brant.Boyer@terraintamers.com
	Kathleen Smith	Land Owner/Developer	541-679-4412	Kayjon@rosenet.net

Mike Baker

OR 42 Expressway Management Plan (EMP)

Citizen Advisory Committee
Meeting #1 – November 30, 2011

Presentation Topics

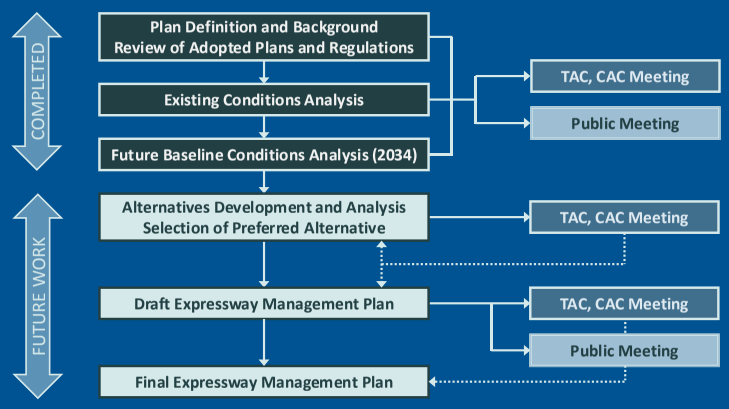
1. Project Overview
   - Purpose
   - Process
   - Goals & Objectives
2. Work Completed
   - Environmental and Land Use Reconnaissance
   - Existing Conditions Analysis
   - Future Analysis
   - Summary of Deficiencies
3. Next Steps

Project Purpose

- Determine how the existing highway functions
  - Existing conditions – Year 2011
  - Future conditions – Year 2035
- Identify strategies/improvements to enhance safety and capacity within the corridor
  - Demand and System Management
  - Additional Infrastructure
- Build upon other transportation projects
  - Statewide Transportation Improvement Program
  - I-5 Exits 119/120 Interchange Area Management Plan
  - OR 42 Corridor Plan

Corridor Planning Area

EMP Planning Process



EMP Draft Goals

The goals of this EMP are to develop a plan for improvements that can be implemented over time to:

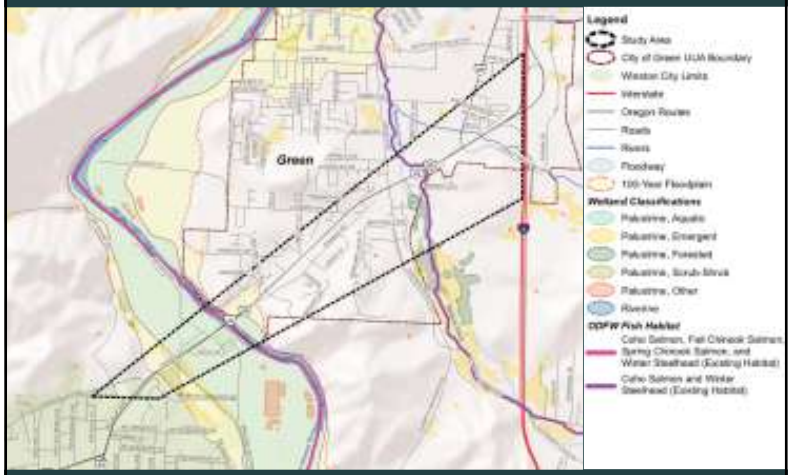
- Improve safety and operations of the expressway corridor for all modes of travel.
- Upgrade the corridor to meet Expressway standards.
- Facilitate freight travel by maintaining efficient through movement in the corridor.
- Provide better accessibility to Roseburg, Winston, and the Green Area consistent with the adopted local comprehensive land use and transportation plans

Environmental and Land Use Reconnaissance

Reconnaissance was performed to understand existing environmental and land use issues and to help inform the process of developing conceptual alternatives.

- Environmental Reconnaissance
  - Natural resources such as riparian corridors, wetlands, wildlife habitat, and recreation trails
  - Wildlife crossings and threatened and endangered species
  - Floodplains and floodways

Natural Features

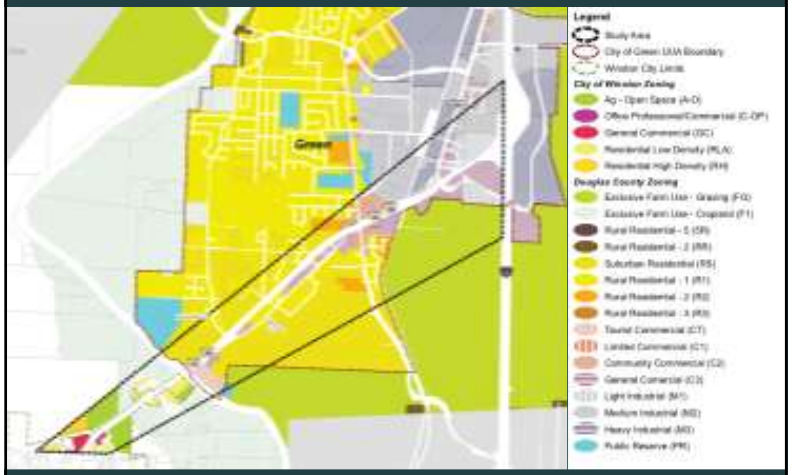


Environmental and Land Use Reconnaissance (continued)

- Land Use Summary
  - Zoning and Comprehensive Plan designations
  - Community features
    - Parks and recreation areas
    - Historical and Archaeological Resources
    - Section 4(f) and 6(f) resources
  - Right-of-way
  - Canals and Culverts
- Socioeconomic and Environmental Justice

Tech Memo #3 includes an Environmental and Land Use "Red Flag" Summary

Zoning Map Designations



Existing Condition Analysis

- Transportation System Inventory
  - Roadways
  - Pedestrian and Bicycle Facilities
  - Transit
  - Freight
  - Rail
- Traffic Conditions
  - Design Hourly Volumes - 2011
  - Traffic Operations – 11 intersections
  - Crash History – 2005 through 2009

OR 42 Corridor Inventory

Pedestrian and Bicycle Facilities

- Sidewalks Present
  - West of the study area (on the south side), until the expressway begins.
  - Only two marked crosswalks (at Carnes Road and OR 99/Grant Smith)
- Bike Lanes Present
  - West of the study area (on the south side), until the expressway
- Multi-use Pathway Present
  - From Lookingglass Road to OR 99/Grant Smith Road along the north side of the expressway
  - Limited crossing opportunities

Other Facilities

- Transit Facilities
  - Two Fixed-Route Services: South County Route 99, and Winston Commuter Route
    - Runs along OR 42 between I-5 and Winston
    - Only one stop in study area (Carnes Road)
  - Paratransit (Dial-a-Ride)
    - Five days per week
    - For those with disabilities who cannot use fixed-routes
- Rail
  - Central Oregon and Pacific Railroad (CORP)
  - No passenger rail service

Existing Traffic Volumes

- 11 Intersections along OR 42
- Common peak hour between 3:45 and 4:45 PM
- Converted to design hourly volumes (DHV) = 30th highest hour
- Traffic count data primarily collected in 2011

Intersection Operations Evaluation

- Performance Measures
  - Volume/Capacity Ratio
    - *Volume = Traffic Demand*
    - *Capacity = Maximum Throughput*
  - Level of Service A through F based on delay
  - 95th Percentile Queues
- Performance Standards
  - ODOT Standards
    - V/C ratio of 0.70 everywhere along OR 42

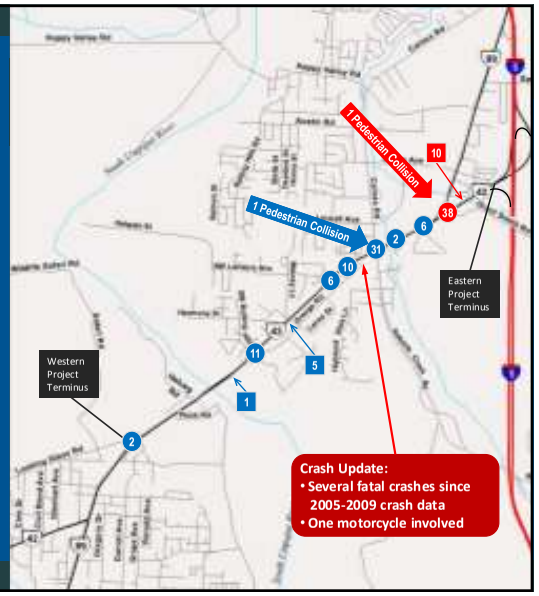
2011 Existing Intersection Operations

Intersection	Critical Movement	2011 PM Peak Hour V/C Ratio	LOS	Delay (sec.)	Operational Standards
OR 42 @ Lookingglass Road	SB L	0.37	C	29	0.70
OR 42 @ Umpqua Safari RV Park	NB L/R	0.03	B	9	0.70
OR 42 @ Pepsi Road	WB L	0.09	B	5	0.70
OR 42 @ Helweg Road / Winston Section Road	SB L/R	0.02	C	14	0.70
OR 42 @ Rolling Hills Road / Andorra Drive	NB L/T/R	0.17	C	13	0.70
OR 42 @ Landers Avenue	SB L	0.20	C	36	0.70
OR 42 @ Emils Way / SW Grange Road	NB L/T/R	0.56	E	20	0.70
OR 42 @ Carnes Road/Roberts Creek Road (Signalized)	Overall	**0.77**	C	30	0.70
OR 42 @ Art Mill Lane	NB L/R	0.02	A	20	0.70
OR 42 @ Winery Lane	WB L	0.01	B	23	0.70
OR 42 @ OR 99/Grant Smith Road (Signalized)	Overall	**0.78**	C	24	0.70

Safety Summary

- 122 crashes over 5 years (2005 through 2009)
- 2 crashes resulted in fatalities or severe injuries
- Highest crash intersections:
  - Carnes Road/Roberts Creek Road (31 crashes)
  - OR 99/Grant Smith Road (38 crashes)
  - Several recent fatal crashes near Grange Road since 2005-2009 Crash Data
- Highest crash segment:
  - From Rolling Hills Road/Andora Drive to Emils Way/Grange Road (32 crashes, including intersections)
- Top 10% Safety Priority Index System (SPIS) Site
  - Surrounding Carnes Road/Roberts Creek Road

OR 42 Crash Summary (2005-2009)



LEGEND

- Intersection Crashes
- Segment Crashes
- Fatal or Severe Injuries Occurred
- Other Injuries or Property Damage Only

Future Baseline Condition Analysis

- Future Traffic Volumes
  - 2035 – Analysis year, using Roseburg Model to forecast traffic volumes
  - Peak Hour Volumes at Intersections
  - Average Daily Volumes on Segments
- Operational Analysis
  - Intersections (V/C, LOS, Queues)

Future Traffic – 2034 Baseline

- Two forecast scenarios developed:
  - 2034 Future Baseline Scenario
    - Based on current 2010 traffic volumes
    - Applies forecast growth from regional travel demand model
  - 2034 Future Baseline Sensitivity Scenario
    - Applies 15% growth to all forecasts from the 2034 Future Baseline Scenario

Traffic Volume Summary

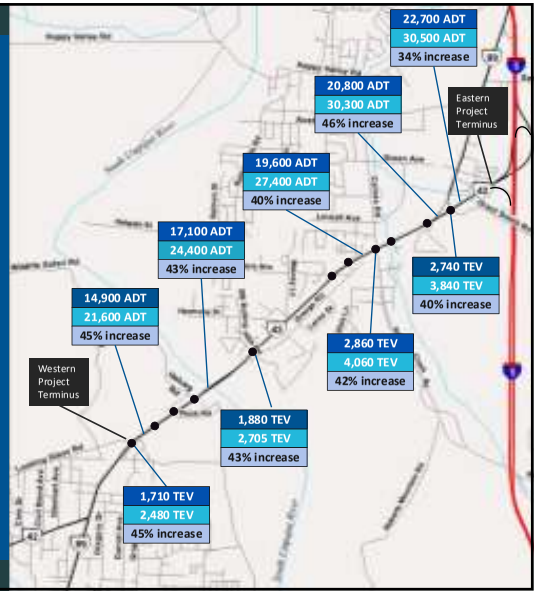
LEGEND

TEV = Total Entering Vehicles (at an intersection in 1 hour)

ADT = Average Daily Traffic (on a roadway segment)

2011 Volume
2035 Volume
% Increase

Note: Future ADT volumes are based on peak hour volume growth.



2035 Future Intersection Operations

Intersection	Critical Movement	2035 PM Peak Hour V/C Ratio	LOS	Delay (sec.)	Operational Standards
OR 42 @ Lookingglass Road	SB L	**0.72**	E	168	0.70
OR 42 @ Umpqua Safari RV Park	NB L/R	0.04	C	19	0.70
OR 42 @ Pepsi Road	WB L	0.13	B	13	0.70
OR 42 @ Helweg Road / Winston Section Road	SB L/R	0.03	D	37	0.70
OR 42 @ Rolling Hills Road / Andorra Drive (Signalized)	Overall	0.64	A	10	0.70
OR 42 @ Landers Avenue	SB L	0.49	E	93	0.70
OR 42 @ Emils Way / SW Grange Road	NB L/T/R	**>2.0**	F	>300	0.70
OR 42 @ Carnes Road/Roberts Creek Road (Signalized)	Overall	**0.98**	D	46	0.70
OR 42 @ Art Mill Lane	NB L/R	0.02	C	20	0.70
OR 42 @ Winery Lane	WB L	0.01	B	23	0.70
OR 42 @ OR 99/Grant Smith Road (Signalized)	Overall	**0.90**	C	43	0.70

2034 Future Queuing Concerns

OR 42 @ Lookingglass Road
- Southbound right-turn queues occasionally extend beyond storage

OR 42 @ Pepsi Road
- Northbound right-turn queues occasionally extend beyond storage

OR 42 @ Rolling Hills Road/Andorra Drive (Signalized)
- Northbound queues occasionally extend beyond next public access
- Southbound queues occasionally extend beyond next public access

OR 42 @ Emils Way
- Northbound queues occasionally extend beyond next public access

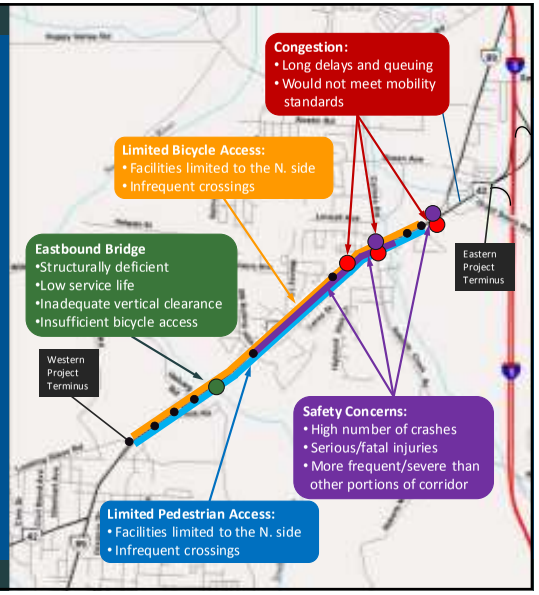
OR 42 @ Carnes Road/Roberts Creek Road (Signalized)
- Queues occasionally extend beyond storage on all approaches

OR 42 @ OR 99/Grant Smith Road (Signalized)
- Eastbound left-turn and southbound left-turn queues occasionally extend beyond storage
- Westbound right-turn queues regularly extend beyond storage

Identified Issues

LEGEND

- Spot Issue
- Segment Issue
- Safety
- Operational
- Pedestrian
- Bicycle
- Bridge



Next Steps

- Concept Analysis and Evaluation
- Selection of Preferred Concepts
- Upcoming Meeting Dates
  - Next TAC and CAC Meetings
    - January or February 2012

OR 42 Expressway Management Plan
Citizen's Advisory Committee

Meeting #2

2:00 PM to 4:00 PM

May 23, 2012

ODOT Region 3 Offices
3500 NW Stewart Parkway
Roseburg, OR 97470

AGENDA

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1. Introductions	Thomas Guevara, ODOT
2. Update on Project Status	Thomas Guevara, ODOT
• Overview of Process	Jennifer Danziger, DEA
• Current Status	
3. Corridor Improvement Concepts	Jennifer Danziger, DEA
• Concept Development	Joshan Rohani, DEA
• Concept Analysis	
4. Discussion	All
• Ideas for modifications to concepts or additional concepts that could be evaluated	
• Input for selection of preferred concepts	
5. Next Steps	Jennifer Danziger, DEA
• Schedule	Thomas Guevara, ODOT
• Upcoming meetings	

OR 42 Expressway Management Plan
Citizen's Advisory Committee (CAC)

Meeting #2

2:00 PM to 4:00 PM

May 23, 2012

ODOT Region 3 Offices
3500 NW Stewart Parkway
Roseburg, OR 97470

Meeting Notes

Attendees: See Attached List

Introductions

Thomas Guevara opened the second Citizen's Advisory Committee (CAC) meeting with a round of introductions, where each person in attendance stated their name and community or agency they were representing. He introduced himself as the ODOT project manager and identified the consultant team.

Update on Project Status

Jennifer Danziger, the Consultant project manager, provided the group with a schedule update, an overview of work completed, and a review of the project goals.

Corridor Improvement Concepts

Jennifer provided the group with a summary of the three key improvement types:

- Multi-Modal Improvements
- Intersection Improvements
- Network Connectivity and Access Control

Jennifer also provided a summary of the evaluation criteria used in the development of the proposed concepts. Joshan Rohani, the Consultant traffic engineer facilitated a detailed discussion of each of the proposed improvement concepts. Six key factors were discussed for each of the improvement concepts:

- Purpose
- Description
- Traffic operations and safety implications (with and without)
- Basic roadway geometry and right of way implications
- Environmental and land use considerations
- Cost opinions

Comments and questions regarding each of the proposed concepts are shown in italics below:

- **Concept 1 – Lookingglass Rd to OR 99/Grant Smith Rd – Enhance Bicycle and Pedestrian Facilities**
    - *This is good to have a focus on multi-modal connectivity.*
    - *Does this include lighting?*
    - *Would we need this if we have the undercrossing?*
- **Concept 2 – Lookingglass Rd to OR 99/Grant Smith Rd – Install Roadway Lighting at Key Locations**
    - *The current roadway/corridor is dark. Lights would make it safer at locations where peds/bikes/vehicles may conflict.*
- **Concept 3 – Multi-Use Undercrossing at Winston Section Road**
    - *Does this eliminate or reduce the need for multi-use facilities along the south side?*
    - *Would vehicular access be restricted? It is currently used as a boat launch and for fishing. Consider installing permanent boat launch and bank stabilization.*
- **Concept 4 – Construct sidewalks with curb and gutter along length of Grange Rd**
    - *Would the County support this project since their standard includes sidewalks?*
    - *Grange traffic would increase with signal at Rolling Hills Road*
- **Concept 5 – Provide a park and ride facility that coordinates with adjacent bus stop**
    - *This would not provide ideal access and there may be soil contaminates at this location*
    - *Could perhaps be relocated to Lookingglass or 99*
    - *The unofficial park and ride currently occurs behind Pacific Pride (on south side of expressway)*
- **Concept 6 – Relocate Lookingglass Rd to connect at 4-way intersection**
    - *Option C (Lost Lane) used to exist but was taken out – not good now*
    - *Option B would impact high quality farmland*
    - *Why can't we add signal; it seems most cost effective?*
    - *Cow Creek tribal land is located to north, would it be impacted?*
    - *Option B or some variation is generally preferred by the CAC if current location can't be signalized.*
- **Concept 7 – Signalize Rolling Hills Rd**
    - *How is this not warranted right now?*
    - *A signal would create gaps in traffic for adjacent side streets. It would alleviate queuing on lots of other streets.*
    - *Street closures might affect some school bus routes*
    - *People currently make left turns from the side streets by taking a right, then making a U-turn on OR 42 (Right turn from Rolling Hills – Becomes turn around at Pepsi, right turn from Grange becomes turn around at Landers)*

- **Concepts 8-10 – Add right-turn deceleration lanes**
    - *This was supported by the CAC.*
- **Concept 11 – Increase intersection capacity at OR 42/Carnes Road**
    - *Currently can't get through signal in one cycle during morning and evening*
    - *There would be lots of business impacts*
    - *Consider combining options C and D into Phase 1 and 2 of the same concept*
- **Concept 12 – Increase intersection capacity and modify signal timing at OR 99/Grant Smith Rd**
    - *Can we widen on west side of OR99?*
    - *Should alternative mobility standards be considered here?*
- **Concept 13 – Extend Rolling Hills Rd to connect with Happy Valley Rd**
    - *Planned project*
- **Concept 14 – Reduce turning conflicts at OR 42 at Emils Way/Grange Rd**
    - *Right-in, Right-out only (Option B) would kill businesses*
    - *Could live with Option A*
    - *Extend Emils to Landers?*
- **Concept 15 – Create new road connection from the east end of Grange Rd to Roberts Creek Rd**
    - *Tannhauser Ave connection is preferred by CAC*
- **Concept 16 – Improve local connectivity and modify access to OR 42 from Rolling Hills Rd to Landers Ave**
    - *Would support school bus routes*
    - *People could move around more easily without getting onto highway*
- **Concept 17 – Control access at Winery Lane**
    - *Option A was preferred by CAC for long-term plan.*
- **Concept 18 – Provide U-Turn opportunities at key locations along OR 42**
    - *No comments*

Next Steps

Additional comments on concepts and memo are due back to Thomas Guevara by June 15, 2012. DEA will take comments from the advisory committees and use them to develop the preferred alternatives to address deficiencies for the next phase of the project. Analysis of the refined concepts will be conducted; a presentation of the preferred alternative will occur during the next TAC and CAC meetings which are expected to occur in the fall. We will provide as much notice as possible about the schedule for those meetings.

Attachments:
Attendance Sheet
Agenda
PowerPoint Presentation

Sign In Sheet

OR 42 Expressway Management Plan
Citizen Advisory Committee (CAC)
May 23, 2012

Initials	Name	Agency	Phone No.	E-Mail
TG	**Thomas Guevara Jr.**	ODOT Project Manager	541-957-3692	Thomas.Guevara@odot.state.or.us
	Jennifer Danziger	DEA Project Manager	503-499-0381	Jed@deainc.com
	Joshan Rohani	DEA Traffic Engineer	503-499-0259	Jwr@deainc.com
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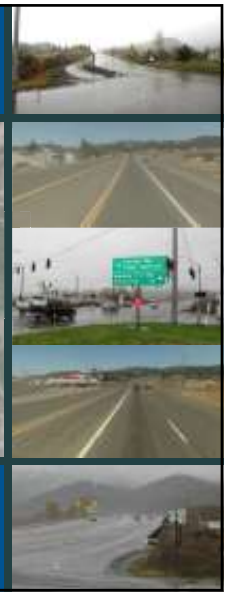
CGK	**Christie Glen-Knutson**	Winston City Councilor	541-679-8721	Chrisglenknutson@yahoo.com
	Dan Van Slyke	Wildlife Safari	541-679-6761 X. 212	Executivedirector@wildlifesafari.net
TML	**Tom Loomis**	Pepsi Co.	541-784-2524	Tloomis@pepsiroseburg.com
VC	**Valynn Currie**	Currieco Real Estate	541-430-0195	Vcurrie223@aol.com
	Chris Baker	RFP	541-784-4501	Chrisb@rfpco.com
DE	**Dave Ewert**	New Hope Church	541-817-6447	Newhope.pastordave@gmail.com
	Pete Carhart	Knife River Materials	541-784-2216	Pete.Carhart@kniferiver.com
BB	**Brant Boyer**	Terrain Tamers	503-341-0238	Brant.Boyer@terraintamers.com
KS	**Kathleen Smith**	Land Owner/Developer	541-679-4412	Kayjon@rosenet.net

OR 42 Expressway Management Plan (EMP)

Citizen Advisory Committee
Meeting #2 – May 23, 2012



Presentation Topics

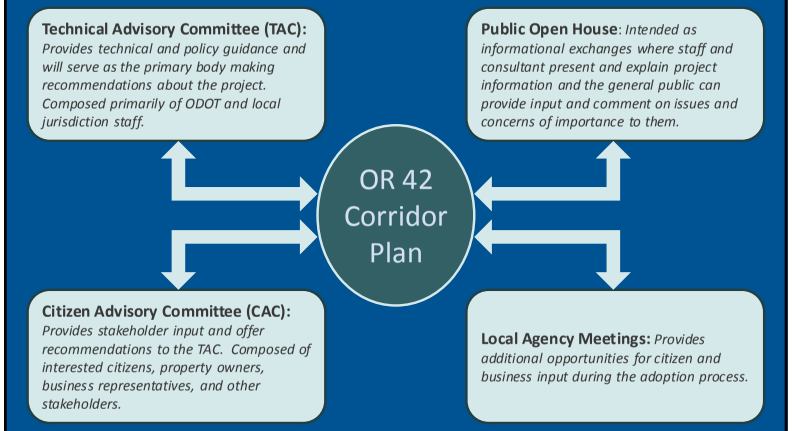
1. Project Overview Recap
2. Concept Development
3. Concept Alternatives Analysis
4. Discussion
   - Ideas for modifications to concepts or additional concepts that could be evaluated
   - Input for selection of preferred concepts
5. Next Steps

Project Purpose

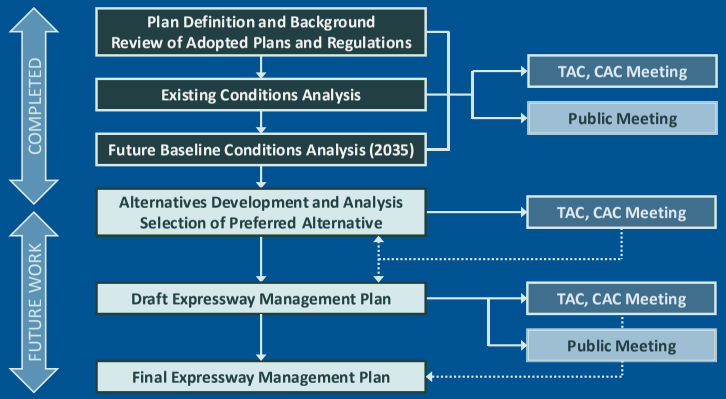
- Determine how the existing highway functions
  - Existing conditions – Year 2011
  - Future conditions – Year 2035
- Identify strategies/improvements to enhance safety and capacity within the corridor
  - Demand and System Management
  - Additional Infrastructure
- Build upon other transportation projects
  - Statewide Transportation Improvement Program
  - I-5 Exits 119/120 Interchange Area Management Plan
  - OR 42 Corridor Plan

Corridor Planning Area

Public Involvement Process



EMP Planning Process



Concept Development

- EMP Goals and Objectives
- Types of Improvements
- Evaluation Criteria
- Organization

EMP Goals

The goals of this EMP are to develop a plan for improvements that can be implemented over time to:

- Improve safety and operations of the expressway corridor for all modes of travel.
- Upgrade the corridor to meet Expressway standards.
- Facilitate freight travel by maintaining efficient through movement in the corridor.
- Provide better accessibility to Roseburg, Winston, and the Green Area consistent with the adopted local comprehensive land use and transportation plans

Types of Improvements

- Multi-Modal Improvements
  Potential improvements to enhance bicycle, pedestrian, and transit facilities along the OR 42 corridor.
- Intersection Improvements
  Potential improvements to improve traffic flow, provide additional capacity, or address safety concerns at individual intersections within the OR 42 corridor.
- Network Connectivity and Access Control
  Potential roadway connections that would improve access for local traffic, address conformity to access control standards along OR 42, and improve safety.

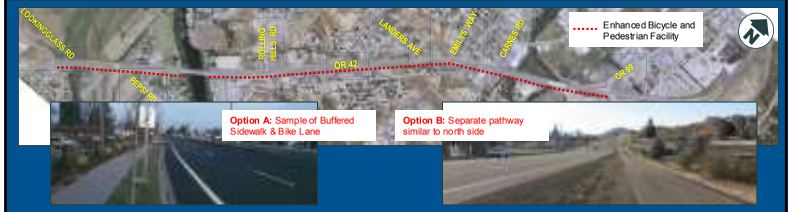
Concept Evaluation Criteria

- Traffic Operations and Safety
  - *Does the improvement address existing operational or safety concerns?*
  - *Does it address system deficiencies?*
  - *Would it cause additional concerns?*
- Basic Roadway Geometry and Right of Way (ROW)
  - *How might the improvement look?*
  - *Would it require additional right of way?*
  - *Are there additional factors to consider in design?*
- Environmental and Land Use
  - *Would it have any potential impact to environmental resources?*
  - *How would it affect adjacent land uses?*
- Cost Opinion*
  - *How much would it cost?*

** Cost opinions do not include estimates of ROW costs or mitigation.*

Concept Locations

Concept 1 – Lookingglass Rd to OR 99/Grant Smith Rd – Enhance Bicycle and Pedestrian Facilities



Purpose: Provide facilities along OR 42 for all modes of travel

Description: Enhance bicycle & pedestrian facilities on south side of OR 42:
- Option A: Stripe eastbound bike lane & provide buffered sidewalk for pedestrians
- Option B: Provide 2-way path with buffer from expressway

Traffic Operations & Safety:
- Both options have potential to improve pedestrian safety
- Option A: Bike lanes clearly define travel way for bicyclists
- Option A: Reduces need for pedestrians & bicyclists to cross expressway
- Option B: Bicyclists also separated from traffic → safer than Option A

Basic Roadway Geometry & Right of Way (ROW):
- Both options could be within the available ROW
- Option A: Includes 8' right shoulder, 6' buffer, a 6' landscape buffer, and a 6' sidewalk with drainage improvements
- Option B: Includes 10' multi-use path with 5' buffer

Environmental & Land Use:
- South Umpqua River is riparian corridor with aquatic habitat, wildlife habitat, and wetlands
- No land use impacts

Cost Opinions:
- Does not include bridge widening or culverts
- Option A: $5.5 million
- Option B: $3.8 million

Concept 2 – Lookingglass Rd to OR 99/Grant Smith Rd – Install Roadway Lighting at Key Locations

Purpose: Enhance visibility and safety in the corridor

Description: Install roadway lighting at key locations

Traffic Operations & Safety:
- Improved safety and security for all modes
- Improved visibility for bicyclists on Roadway, pedestrians on sidewalks and crossing roadways, etc.

Basic Roadway Geometry & Right of Way (ROW):
- Improvements included in this concept would occur within the available right of way (ROW)

Environmental & Land Use:
- There are not any anticipated environmental or land use impacts associated with the proposed lighting improvements.
- Lighting spillover and skyglow may reach adjacent properties.

Cost Opinions:
- Specific costs are dependent on number of locations identified and will be determined as the preferred concept is identified

Concept 3 – Multi-Use Undercrossing at Winston Section Road

Purpose: Provide safe route for bicyclists and pedestrians to cross OR 42

Description: Connect Winston Section Rd to the multi-use path on the north side of OR 42 with a multi-use path undercrossing

Traffic Operations & Safety:
- Minimizes pedestrians & bicycles crossing at unsignalized locations
- Improves safety for vulnerable users
- Some out-of-direction travel
- Would connect to bicycle & pedestrian facilities on south side if constructed with Concept 1

Basic Roadway Geometry & Right of Way (ROW):
- Can be constructed within the existing ROW
- Pathway approximately 1,000' long, with a typical width of 10'
- Minimal excavation required because of the existing terrain

Environmental & Land Use:
- South Umpqua River is riparian corridor with aquatic habitat, wildlife habitat, and wetlands
- Existing area underneath the bridges is already heavily disturbed

Cost Opinion:
- $450,000

Concept 4 – Construct sidewalks with curb and gutter along length of Grange Rd

Purpose: Provide parallel route to OR 42 for bicyclists and pedestrians

Description: Construct sidewalks with curb and gutter along length of Grange Rd

Traffic Operations & Safety:
- Buffered sidewalks improve safety of pedestrians
- Reduces need for pedestrians &bicyclist to cross the highway
- Slower adjacent traffic volumes
- Most parcels on the south side of OR 42 take access from Grange Rd
- Slight increase in travel distance for through traffic

Basic Roadway Geometry & Right of Way (ROW):
- Currently no pedestrian facilities along Grange Rd
- Could be constructed within the available ROW
- Includes illumination for the new facilities along Grange Rd
- 6' wide sidewalks included on both sides of the Roadway
- Roadway assumed to have shared lanes for bicycles & vehicles

Environmental & Land Use:
- Drainage assumed with the sidewalk installation.
- No anticipated environmental or land use impacts.

Cost Opinion:
- $5.5 million

Concept 5 – Provide a park and ride facility that coordinates with adjacent bus stop

Purpose: Improve transit facilities

Description: Provide a park and ride facility that coordinates with the adjacent bus stop

Traffic Operations & Safety:
- Facilitates connections with South County Route 99, Winston Commuter Route, and carpooling.
- Access limited to right-in and right-out

Basic Roadway Geometry & Right of Way (ROW):
- Could be constructed within the available ROW
- Approximately 75 to 125 parking spaces
- Access limited to right-in and right-out

Environmental & Land Use:
- No environmental resource impacts
- Would require modified use of existing ODOT property

Cost Opinion:
- $1.0 million

Concept 6 – Relocate Lookingglass Rd to connect at 4-way intersection

Purpose: Improve operations and safety

Description: Close current connection & relocate Lookingglass Rd to connect at 4-way intersection with traffic signal
- Option A: Extend Lookingglass Rd east to Pepsi Rd
- Option B: Extend Lookingglass Rd east to Umpqua Safari with potential Pepsi Rd extension to west
- Option C: Close or limit Lookingglass to right-in only and realign with Brosi Orchard Rd

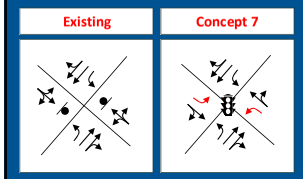
Traffic Operations & Safety:
- Option A: Reduces delays & improves safety for side-street left turns but increases delays for mainline through
- Option B: Same as Option A
- Option C: Same as Option A but greater increases in delays for mainline stopping on incline

Basic Roadway Geometry & Right of Way (ROW):
- All options primarily outside existing ROW
- Option A: 2,100' new roadway with of new culvert and bridge
- Option B: 1,000 new roadway on north side and 1,100' on south side with new bridge & culvert
- Option C: 600' new roadway connecting at skewed intersection with a steeper grade than current approach

Environmental & Land Use:
- All options require acquisition of ROW
- Option A: Impacts two homes on the north side
- Options A & B: Interacts with floodway & 100-year floodplain
- Option C: Impacts existing structure but no environmental impacts

Cost Opinions:
- Option A: $5.5 million
- Option B: $3.8 million
- Option C: $1.5 million

Concept 7 – Signalize Rolling Hills Rd



Existing Lane Configuration
Concept Lane Configuration

Purpose: Improve operations and safety

Description: Signalize intersection (Should be considered in conjunction with Concepts 13, 14, and 16)

Traffic Operations & Safety:
- Preliminary signal warrants are not currently met
- Warrants would likely be met with Rolling Hills extension and other local connectivity improvements with access restrictions
- Reduced delay and improved safety for side-streets
- Increased delays for mainline through traffic

Basic Roadway Geometry & Right of Way (ROW):
- 16 crashes reported at Rolling Hills Rd intersection
- Signalization of Rolling Hills Rd can occur within existing ROW
- Should be considered with local system enhancements and access control in Concepts 13, 14, and 16

Environmental & Land Use:
- No environmental resource or land use impacts

Cost Opinion:
- $500,000 for signal improvements
- Local connectivity costs are not included in estimate

Concepts 8-10 – Add right-turn deceleration lanes

Purpose: Address existing safety concerns and decrease delay

Description: Add right-turn deceleration lanes on OR 42:
- Eastbound and westbound at Rolling Hills Rd
- Westbound at Landers Ave
- Eastbound and westbound at Emils Way/Grange Rd

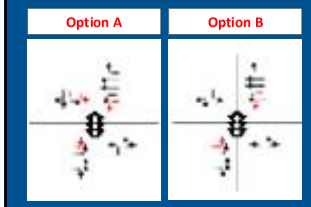
Traffic Operations & Safety:
- Right-turn deceleration lanes allow deceleration in a lane separated from high-speed through traffic → improved safety
- Some operational benefits with separated right turns
- One serious injury crash reported involving right-turn at Landers Ave

Basic Roadway Geometry & Right of Way (ROW):
- Can be accommodated within existing ROW
- Modifies corners of intersection to provide deceleration lane
- Adjacent drainage and multiuse path would need to be shifted to north
- Lighting for intersection is included

Environmental & Land Use:
- No land use or environmental impacts anticipated

Cost Opinions:
- $250,000 per deceleration lane

Concept 11 (without Rolling Hills Rd Extension) – Increase intersection capacity



Existing Lane Configuration
Concept Lane Configuration

Purpose: Improve operations and safety

Description: Increase intersection capacity to meet forecast demand
- Option A: Install dual left turns on eastbound, westbound, and southbound approaches
- Option B: Install dual left turns for eastbound and westbound approaches

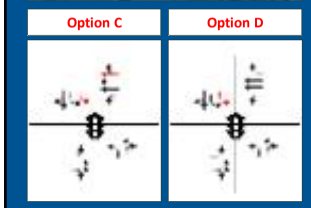
Traffic Operations & Safety:
- Top 10% of Safety Priority Index System and 39 crashes in 6-year period
- Each option would provide protected left turns for all approaches
- Option A: Forecast v/c ratio of 0.81 (just exceeds OHP target of 0.80)
- Option B: Forecast v/c ratio of 0.84 (exceeds OHP target)

Basic Roadway Geometry & Right of Way (ROW):
- Widening OR 42 would occur on both sides of roadway for left-turn lanes
- Widening on Carnes and Roberts Creek Rd would occur on east side to minimize impacts
- More widening on Carnes Rd with Option A than Option B
- All options would involve ROW impacts – more with Option A than B

Environmental & Land Use:
- Impacts adjacent properties for each of the proposed options
- Only Option B avoids impacts to existing structures
- No environmental resource impacts

Cost Opinions: No estimates include ROW costs
- Option A: $3.1 million
- Option B: $2.8 million

Concept 11 (with Rolling Hills Rd Extension) – Increase intersection capacity



Existing Lane Configuration
Concept Lane Configuration

Purpose: Improve operations and safety

Description: Increase intersection capacity to meet forecast demand
- Option C: Install dual left turns on southbound approach & convert the westbound right-turn lane into a shared through/right
- Option D: Install dual left turns on southbound approach

Traffic Operations & Safety:
- Top 10% of Safety Priority Index System and 39 crashes in 6-year period
- Each option would provide protected left turns for all approaches
- Option C: Forecast v/c ratio of 0.78 (meets OHP target of 0.80)
- Option D: Forecast v/c ratio of 0.86 (exceeds OHP target)

Basic Roadway Geometry & Right of Way (ROW):
- Widening on Carnes and Roberts Creek Rd would occur on east side to minimize impacts
- Option C: Extends third westbound through lane almost 2,000'
- All options would involve ROW impacts – Option D has fewest

Environmental & Land Use:
- Impacts to adjacent properties for each of the proposed options
- Only Option B would avoid impacts to existing structures.
- No environmental resource impacts

Cost Opinions: No estimates include ROW costs
- Option C: $2.1 million
- Option D: $1.3 million

Concept 12 – Increase intersection capacity and modify signal timing at OR 99/Grant Smith Rd

Existing Lane Configuration
Concept Lane Configuration

Purpose: Improve operations and safety

Description: Installing dual left turns on eastbound approach & modify traffic signal to provide protected left turns on all approaches

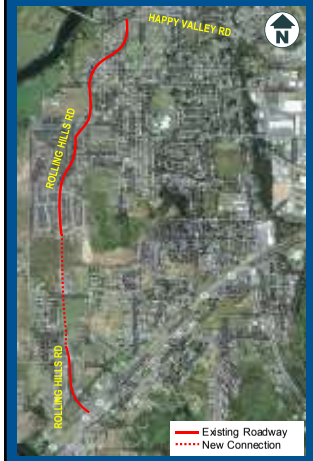
Traffic Operations & Safety:
- 44 crashes during 6-year study period
- Forecast v/c ratio of 0.80 (just meets OHP target of 0.80)
- Provide protected left turns for all approaches

Basic Roadway Geometry & Right of Way (ROW):
- Widen OR 42 to facilitate dual left-turn lanes
- Widen OR 99 to for additional receiving lane
- Impacts ROW in northwest, northeast, and southwest quadrants

Environmental & Land Use:
- Impacts adjacent properties but would not existing structures
- No environmental resource impacts

Cost Opinions:
- $1.0 million
- Does not include ROW costs

Concept 13 – Extend Rolling Hills Rd to connect with Happy Valley Rd



Purpose: Improved connectivity

Description: Extend Rolling Hills Rd to connect with Happy Valley Rd (Should be considered in conjunction with Concept 7)

Traffic Operations & Safety:
- Relieves demand on capacity-constrained Carnes Rd
- Higher demand at OR 42 would likely warrant traffic signal (Concept 7)

Basic Roadway Geometry & Right of Way (ROW):
- Would involve ROW impacts
- 2,400' of additional roadway, primarily outside of existing ROW
- Would meet collector street design standards

Environmental & Land Use:
- Involves property impacts but could avoid impacts to existing structures
- No environmental resource impacts

Cost Opinions:
- $3.5 million
- Does not include ROW costs

Concept 14 – Reduce turning conflicts at OR 42 at Emils Way/ Grange Rd

Purpose: Enhance safety for all users

Description: Reduce turning conflicts (Should be considered in conjunction with Concepts 15 and 18)
- Option A: Restrict traffic movements turning onto OR 42 to right turn only but allow both right and left turns from OR 42 onto the side streets.
- Option B: Restrict all traffic movements to right turns only

Traffic Operations & Safety:
- 12 crashes during a 6-year study period including one fatality (about half of turning crashes involved left turns from side street to OR 42)
- Option A: Eliminates some of the turning-related conflicts
- Option B: Eliminates all of the left turning-related conflicts

Basic Roadway Geometry & Right of Way (ROW):
- Option A: Raised median with turn lanes may require widening within existing ROW and drainage relocation would need to occur
- Option B: Raised median could be installed within the existing ROW

Environmental & Land Use:
- Accessibility to local businesses would be affected – more impacts with Option B than Option A
- Drainage relocation would need to occur

Cost Opinions:
- Option A: $1.3 million
- Option B: $300,000

Concept 15 – Create new road connection from the east end of Grange Rd to Roberts Creek Rd

Purpose: Provide alternative access to facilitate access management along OR 42

Description: Create new connection from Grange Rd to Roberts Creek Rd (Should be considered with Concept 14)
- Option A: Extend Grange Rd east to Brittney Ave
- Option B: Extend Grange Rd east to Tannhauser Ave

Traffic Operations & Safety:
- Option A: Adds traffic to Brittney Rd
- Option B: Connection opposite Tannhauser Ave more than 500' from signal at OR 42
- Option B: More direct to Roberts Creek Rd than Option A
- Option B: No added traffic on local streets

Basic Roadway Geometry & Right of Way (ROW):
- Includes 12' travel lanes, 8' shoulders, and 6' sidewalks
- Both extensions would require additional ROW
- Option A: 1,200' of new roadway
- Option A: Mostly uses existing but unimproved ROW from Brittany Ave to Grange Rd but additional ROW would still be required.
- Option B: 1,600' new roadway primarily outside of the existing ROW

Environmental & Land Use:
- Option A: Rerouted traffic to Brittney Ave travel past residences and school
- Option B: Impacts an existing structure
- Option B: Consistent with long-term Douglas County plans.

Cost Opinions:
- Neither option includes ROW costs
- Option A: $2.1 million
- Option B: $2.5 million

Concept 16 – Improve local connectivity and modify access to OR 42 from Rolling Hills Rd to Landers Ave

Purpose: Improved connectivity and alternative access

Description: Improve local connectivity and modify access to OR 42 from Rolling Hills Rd to Landers Ave, including connections between Melody Lane, Stella Street, Depriest Street, and Circle Drive

Traffic Operations & Safety:
- 7 crashes reported in segment between Rolling Hills Rd and Landers Ave
- 7 crashes reported at Landers Ave
- Improves safety along the expressway by directing turning vehicles to targeted and signalized locations where they can be accommodated with lesser crash risk
- Traffic patterns would change on local streets

Basic Roadway Geometry & Right of Way (ROW):
- Proposed connections would meet Douglas County local road standards
- Additional ROW would be required
- Some of these connections have been shown in approved development plans but have not yet been constructed

Environmental & Land Use:
- Some alignments may have impacts on existing residential structures
- Traffic volumes would be higher on some local streets
- No environmental impacts with this concept

Cost Opinions: Costs would be dependent upon chosen alignments

Concept 17 – Control access at Winery Lane

Existing Roadway
Concept Option

Purpose: Enhance safety for all users

Description: Control access at Winery Ln
- Option A: Create connection to Grant Smith Rd & close access to OR 42
- Option B: Limit access at OR 42 to right-in/right-out & provide U-turn opportunities

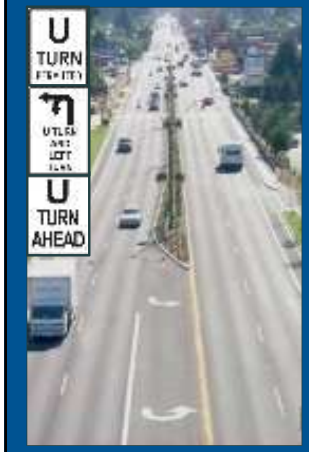
Traffic Operations & Safety:
- Option A: Diverts Winery Lane traffic to Grant Smith Rd with minimal impact on signalized intersection operations
- Option A: Closure of Winery Lane eliminates potential crashes associated with unsignalized intersections
- Option B: Converts all turning movements to right turns only
- Option B: Drivers can use alternative routes or make U-turns on OR 42

Basic Roadway Geometry & Right of Way (ROW):
- Option A: Douglas County local road standards – 11' lanes & 3' shoulders
- Option A: Requires additional ROW
- Option B: Include raised median within the existing ROW – no widening

Environmental & Land Use:
- Option A: Additional ROW required from adjacent property owners
- Option B: Drivers inconvenience by the turn restrictions could impact businesses

Cost Opinions:
- Option A: $600,000 excluding ROW acquistion
- Option B: $100,000

Concept 18 – Provide U-Turn opportunities at key locations along OR 42



Purpose: Supplement intersection closures and right-in/right-out only movements

Description: Provide U-Turn Opportunities at Key Locations along OR 42

Traffic Operations & Safety:
- U-turns instead of direct left turns can reduce the frequency of all crashes by approximately 20 percent
- Delay will increase slightly for left-turns from side-streets as a result of out-of-direction travel

Basic Roadway Geometry & Right of Way (ROW):
- Raised concrete medians or paint can be used to demarcate U-turn locations within the existing medians and ROW

Environmental & Land Use:
- This concept would not have environmental or land use impacts

Cost Opinions:
- $100,000 per locations
- Assumes raised concrete medians are chosen

Next Steps

- Analysis of modified or additional concepts
- Selection of preferred concepts
- Development of draft Expressway Management Plan

OR 42 Expressway Management Plan
Citizen's Advisory Committee

Meeting #3

1:30 PM to 3:30 PM

January 9, 2013

ODOT Region 3 Offices
3500 NW Stewart Parkway
Roseburg, OR 97470

AGENDA

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1. Introductions — Thomas Guevara, ODOT

2. Draft Corridor Plan — Jennifer Danziger, DEA; Joshan Rohani, DEA
   - Organization
   - Recommended Improvements
   - Access Management
   - Other Management Actions

3. Open Discussion — All
   - Final recommendations for EMP
   - Project Priorities

4. Next Steps — Thomas Guevara, ODOT

Filename: OR42 CAC3 Agenda 01-09-2013.docx

OR 42 Expressway Management Plan
Citizen's Advisory Committee (CAC)

Meeting #3

1:30 PM to 3:30 PM

January 9, 2013

ODOT Region 3 Offices
3500 NW Stewart Parkway
Roseburg, OR 97470

Meeting Notes

Attendees: See Attached List

Introductions

Thomas Guevara opened the third Citizen's Advisory Committee (CAC) meeting with a round of introductions, where each person in attendance stated their name and community or agency they were representing. He introduced himself as the ODOT project manager and identified the consultant team. Then he provided an overview of the Draft OR 42 Expressway Management Plan and indicated that the review period will end on March 1st, when all comments should be submitted to him.

Update on Project Status

Jennifer Danziger, the Consultant project manager, provided the group with a schedule update, an overview of work completed, and a review of the project goals.

Draft Plan

Jennifer also provided the group with a summary of the draft plan layout and content:

- Introduction
- Evaluation of Baseline Conditions
- Summary of Expressway Deficiencies
- EMP Improvements
- Expressway Access Management Plan
- Other Management Actions
- Plan Monitoring and Funding

Joshan Rohani, the Consultant Transportation Engineer, then led the group through the list of 18 recommended projects associated with the expressway and local system. Then he provided an overview of the access management plan for the OR 42 corridor, followed by a summary of transportation system management (TSM), and transportation demand management (TDM) improvements.

Discussion

Joshan Rohani and Jennifer Danziger facilitated the discussion of each of the recommended improvements as well as review of the access management plan. Comments and questions regarding each of the recommended concepts are shown in italics below:

- **Concept 1 – Lookingglass Rd to Winston Section Rd – Add Multi-use path on South Side of OR 42**
    - *No comments – general support.*
- **Concept 2 – Winston Section Rd – Multi-Use Undercrossing**
    - *No comments – general support.*
- **Concept 3 – OR 42/Rolling Hills Rd: Install Traffic Signal & Frontage Rd Connecting to Jackie Ln**
    - *Does it include the cost of Jackie Lane connection?*
    - *Is there a chosen alignment for the connection to Jackie? Will the County improve Harmony Lane as the alternate connection?*
    - *Many of the other concepts seem connected with the implementation of this concept (need to identify priorities – which improvements are mandatory for another project to advance).*
    - *General support.*
- **Concept 4 – OR 42/Rolling Hills Rd: Add Eastbound and Westbound Right-turn Deceleration Lanes**
    - *Is there a way to extend the striped left-turn bay, in the eastbound direction, within the two-way-left-turn lane so that drivers have more room to decelerate?*
    - *General support.*
- **Concept 5 – East of Rolling Hills Rd through Landers Ave: Add Raised Barrier**
    - *Will other improvements be in place prior to the installation of barrier (U-turns and signal at Rolling Hills) since they seem related?*
- **Concept 6 – Install Roadway Lighting at Key Locations**
    - *No comment – general support.*
- **Concept 7 – OR 42/Landers Ave: Add Westbound Right-turn Deceleration Lane**
    - *No comment – general support.*
- **Concepts 8– OR 42/Emils Way/Grange Rd: Add Raised Median**
    - *Will there be a commitment to connect Grange Road to Roberts Creek if access is taken away from OR 42?*
    - *Can we restripe Grange and Rolling Hills approach to OR 42 for left- and right-turn lanes? There seems to be enough room.*
- **Concepts 9– OR 42/Emils Way/Grange Rd: Add Eastbound and Westbound Right-turn Deceleration Lane**
    - *No comment – general support.*

- **Concepts 10 – OR 42/Carnes Rd/Roberts Creek Rd: Add Second Southbound Left-turn Lane**
    - *Would require design exception to not meet Highway Design Manual (HDM) standards. Revise priority to have the first phase include westbound lanes (#11), which has less of a right-of-way impact than a second SBL turn lane (#10).*
- **Concept 11 – OR 42/Carnes Rd/Roberts Creek Rd: Add Third Westbound Through Lane**
    - *See comment for Concept 10.*
- **Concept 12 – OR 42/Winery Ln: Add Raised Barrier to Restrict Turns to Right-in/Right-out**
    - *Should we extend the barrier to Art Mill? Volumes are low. If not, Art Mill would be the one gap of controlled access throughout the corridor.*
    - *Trucks enter/exit Art Mill (difficult to make u-turns), and there isn't a low-cost way to provide alternative access.*
    - *General support for Concept 12, with or without Art Mill access control.*
- **Concept 13 – OR 42/OR 99/Grant Smith Rd: Add Second Eastbound Left-Turn Lane**
    - *Is the eastbound-left turn the best value improvement? It seems like traffic volumes are relatively low for this movement.*
    - *General support.*
- **Concept 14 – Lookingglass Rd and Pepsi Rd: Realign to Create 4-way Signalized Intersection**
    - *General support, although this concept is expensive, while being a low priority.*
    - *This concept would likely need support from other businesses/development to overcome funding challenges.*
- **Concept 15 – Rolling Hills Rd: Extend Northward to Connect with Happy Valley Rd**
    - *General support; however, there is currently no development planned to support this extension with funding.*
- **Concept 16 – Local Network Connections: Improve Connectivity between Melody Ln, Stella St, Depriest St, Circle Dr. & Chandler Dr**
    - *There's a house at the end of Chandler, so that connection is not likely to occur. Confirm consistency with County plan.*
- **Concept 17 – Grange Rd: Create New Connection from East End of Grange Rd to Roberts Creek Rd**
    - *No comment – general support.*
- **Concept 18 – Winery Ln: Extend Grants Smith Rd & Close Existing Access to OR 42**
    - *There are two alignments shown for the Winery Lane connection to Grant Smith Road – the option that travels along OR 42 frontage won't work due to the grade. Only show the other platted option.*

Next Steps

Additional comments on concepts and memo are due back to Thomas Guevara by March 1, 2013. DEA will take comments from the advisory committees and open house, and incorporate them into the final Expressway Management Plan.

Attachments:
Attendance Sheet
Agenda
PowerPoint Presentation

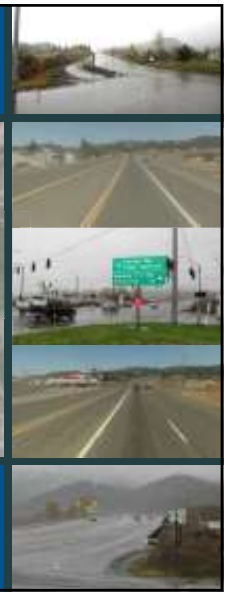
OR 42 Expressway Management Plan

Citizen Advisory Committee (CAC)

Name	Agency	Phone No.	E-Mail
Thomas Guevara Jr. TG	ODOT Project Manager	541-957-3692	Thomas.Guevara@odot.state.or.us
Jennifer Danziger JD	DEA Project Manager	503-499-0381	Jed@deainc.com
Joshan Rohani JR	DEA Traffic Engineer	503-499-0259	Jwr@deainc.com
Susan Morgan	Douglas County Commissioner	541-440-4202	Tina@co.douglas.or.us
Christie Glen-Knutson	Winston City Councilor	541-679-8721	Chrisglenknutson@yahoo.com
Dan Van Slyke	Wildlife Safari	541-679-6761 X. 212	Executivedirector@wildlifesafari.net
Tom Loomis TML	Pepsi Co.	541-784-2524	Tloomis@pepsiroseburg.com
(L5) Valynn Currie VC	Currieco Real Estate	541-430-0195	Vcurrie223@aol.com
Chris Baker CB	RFP	541-784-4501	Chrisb@rfpco.com
Dave Ewert	New Hope Church	541-817-6447	Newhope.pastordave@gmail.com
Pete Carhart	Knife River Materials	541-784-2216	Pete.Carhart@kniferiver.com
Brant Boyer BB	Terrain Tamers	503-341-0238	Brant.Boyer@terraintamers.com
Kathleen Smith KS	Land Owner/Developer	541-679-4412	Kayjon@rosenet.net
Pat Spangler	Spangler Vineyards	541-679-9654	Pat@spanglervineyards.com

OR 42 Expressway Management Plan (EMP)

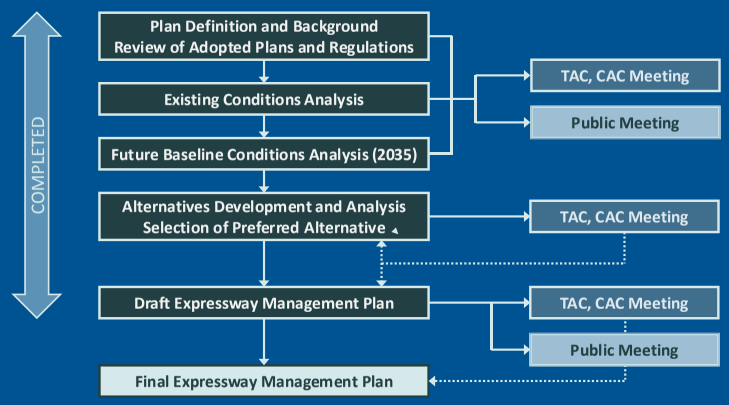
Citizen Advisory Committee
Meeting #3 – January 9, 2013



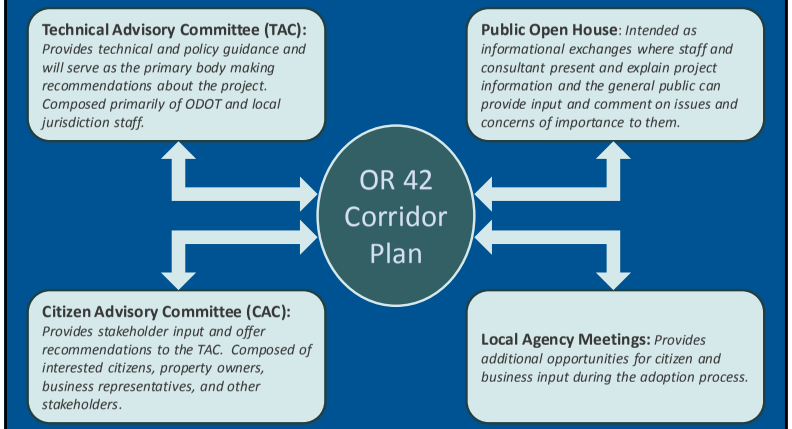
Presentation Topics

1. Draft Plan
   - Organization
   - Recommended Improvements
   - Access Management
   - Other Management Actions
2. Discussion
   - Final recommendations for EMP
   - Project Priorities
3. Next Steps

EMP Planning Process



Public Involvement Process



EMP Goals

The goals of this EMP are to develop a plan for improvements that can be implemented over time to:

- Improve safety and operations of the expressway corridor for all modes of travel.
- Upgrade the corridor to meet Expressway standards.
- Facilitate freight travel by maintaining efficient through movement in the corridor.
- Provide better accessibility to Roseburg, Winston, and the Green Area consistent with the adopted local comprehensive land use and transportation plans

Draft Plan Organization

VOLUME 1

1. INTRODUCTION
2. EVALUATION OF BASELINE CONDITIONS
3. SUMMARY OF EXPRESSWAY DEFICIENCIES
4. EMP IMPROVEMENTS
5. EXPRESSWAY ACCESS MANAGEMENT PLAN
6. OTHER MANAGEMENT ACTIONS
7. PLAN MONITORING AND FUNDING

VOLUME 2

- Technical material
- Detailed process documentation
- Summary of Public Outreach

EMP Improvements

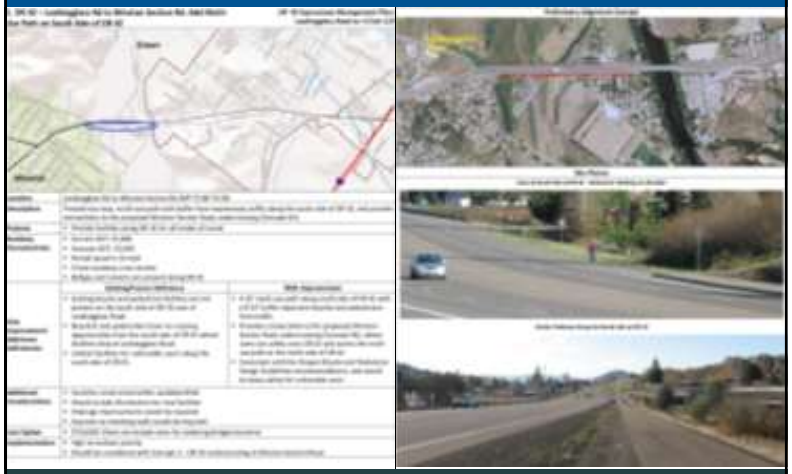
- EMP Improvements
  - 13 Expressway Improvements
  - 5 Local System Improvements
  - 6 Other Improvements
    - Transportation System Management
    - Transportation Demand Management
- Summary Table
  - Description
  - Implementation (Priority, Triggers)
  - General Funding Categories

EMP Improvements

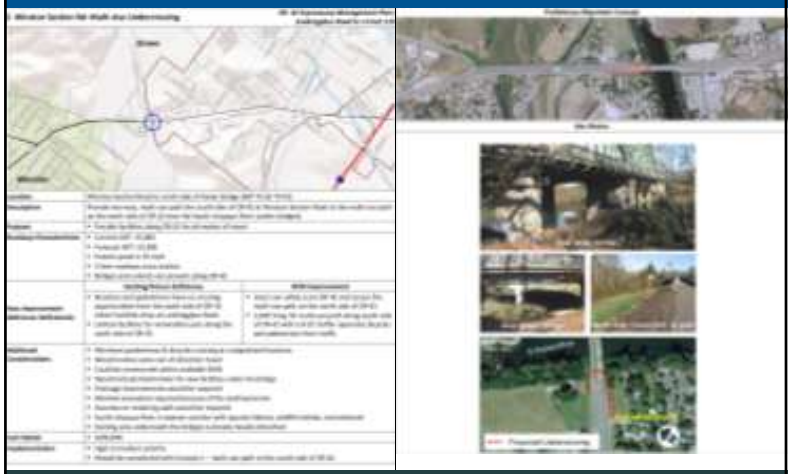
- Project Sheets
  - 18 prepared
    - Expressway and Local System Improvements
  - Generally two pages
    - Page 1 – Descriptive
    - Page 2 – Illustrative

EMP Improvements

EMP Project 1

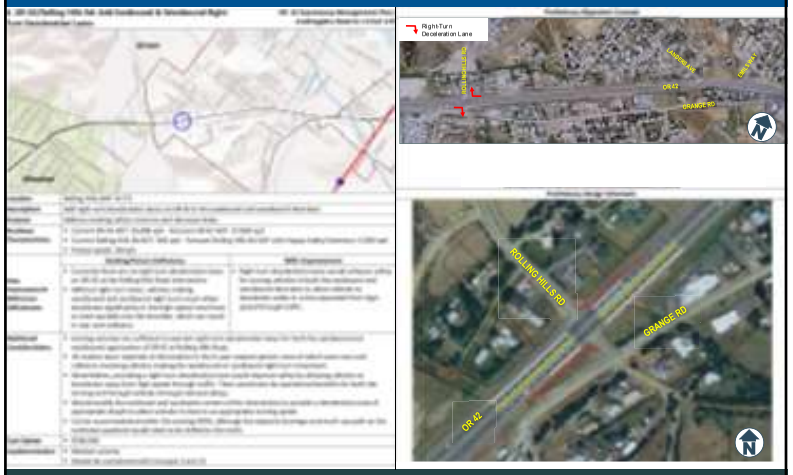


EMP Project 2

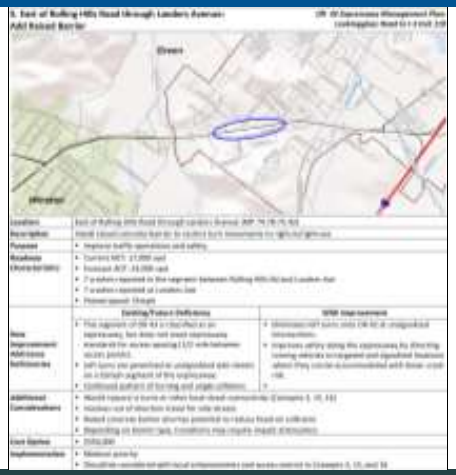


EMP Project 3

EMP Project 4

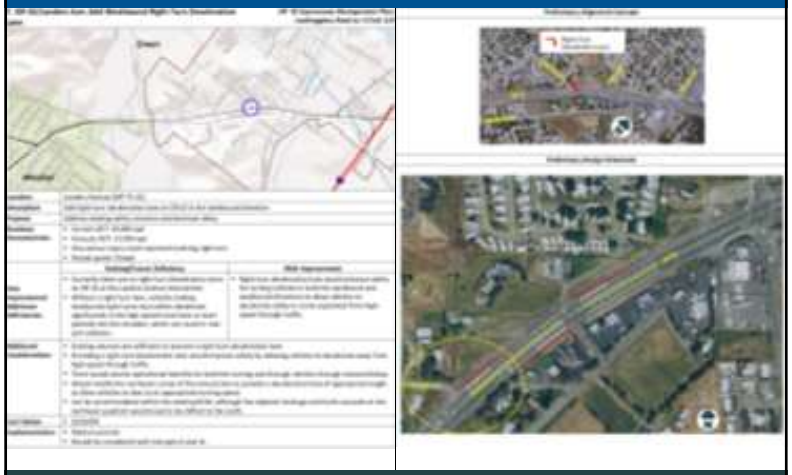


EMP Project 5



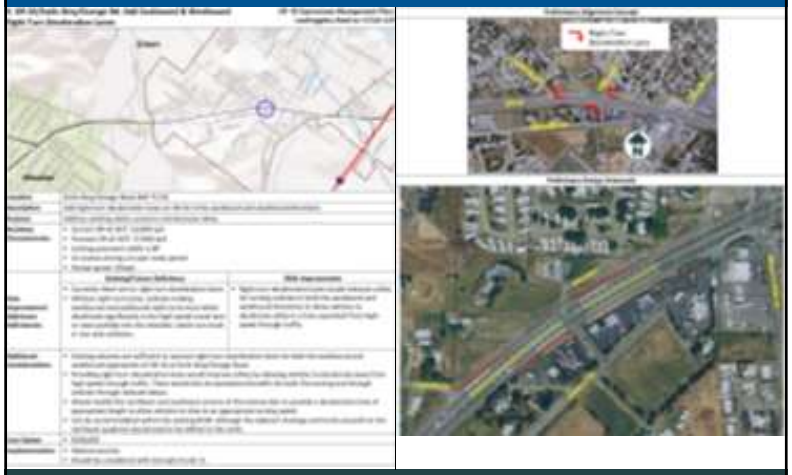
EMP Project 6

EMP Project 7

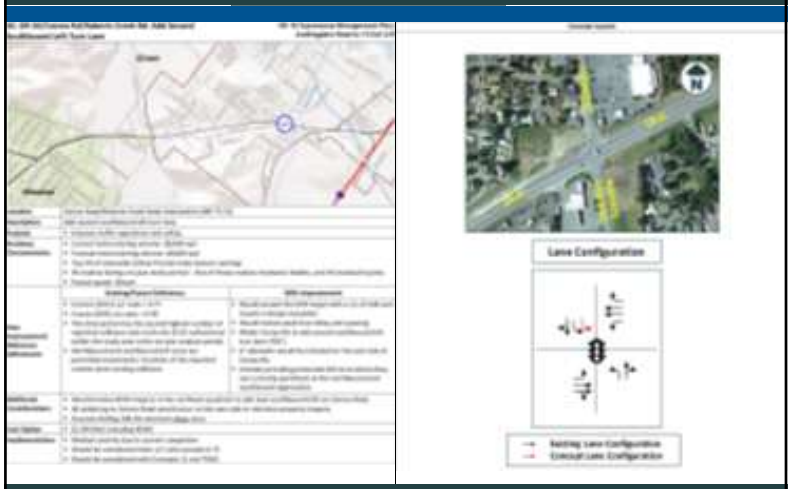


EMP Project 8

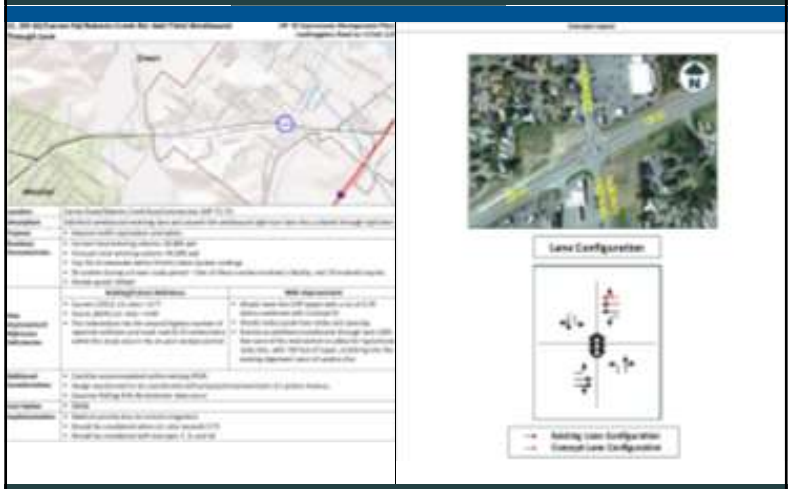
EMP Project 9



EMP Project 10

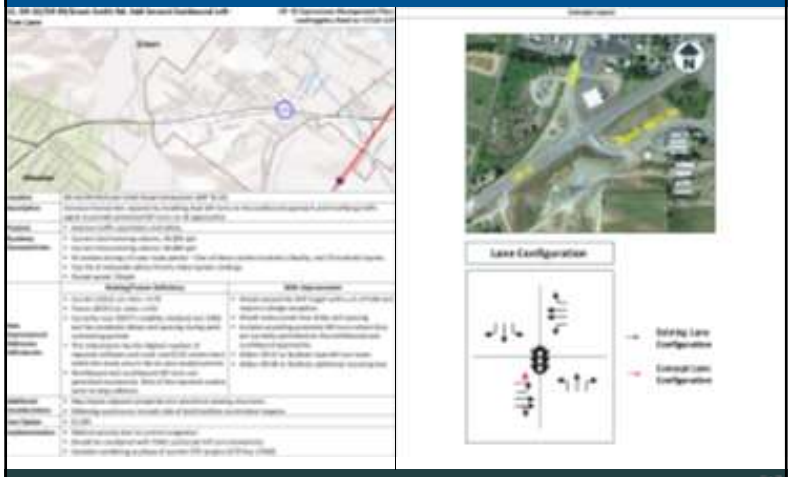


EMP Project 11

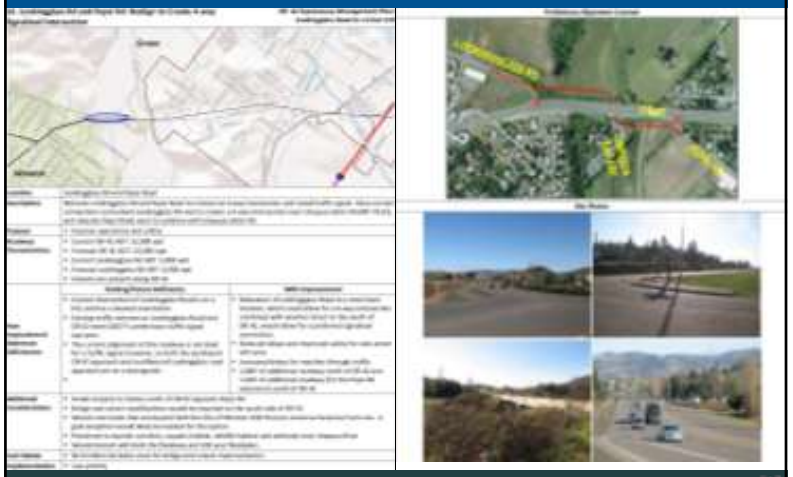


EMP Project Sheet 12

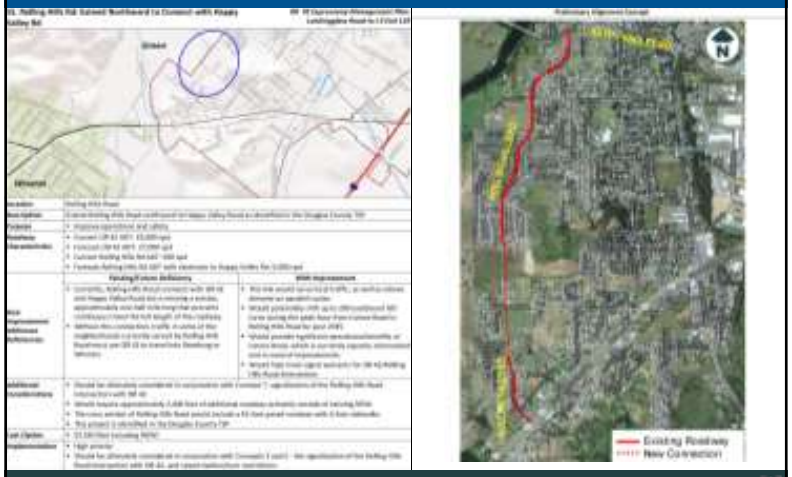
EMP Project 13



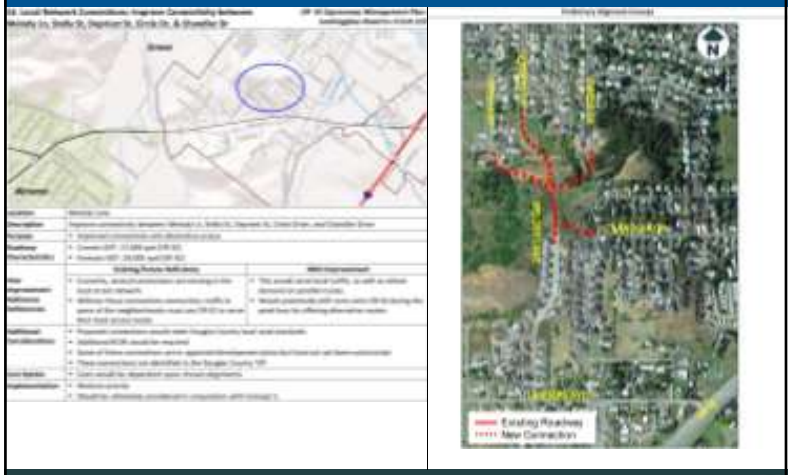
EMP Project 14



EMP Project 15

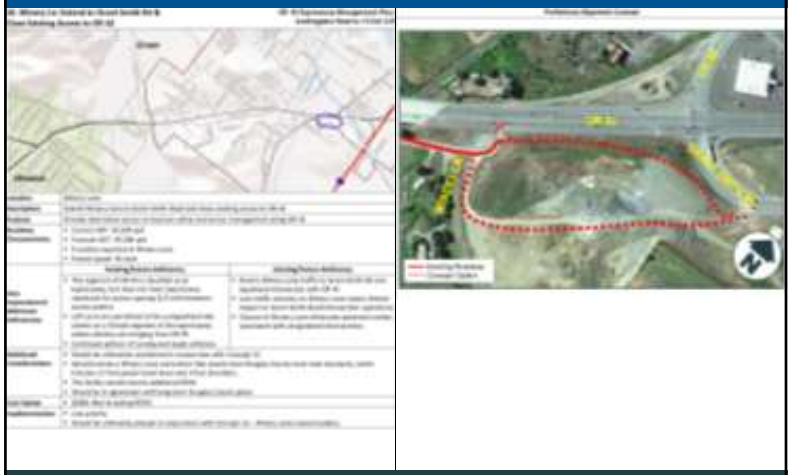


EMP Project 16



EMP Project 17

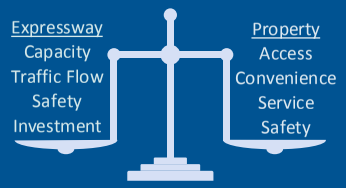
EMP Project 18



Next Steps

- Analysis of modified or additional concepts
- Selection of preferred concepts
- Development of draft Expressway Management Plan

Access Management Plan (AMP)



- Access Management Standards
  - Standards in plan will be adopted by the Oregon Transportation Commission
- Access Management Actions
  - Access management would happen when:
    - Applications for land use changes or development are submitted
    - Future highway improvement projects move into design and construction
    - Safety and/or operational problems arise

Private Approaches

- Standards do not apply to driveways in existence prior to January 1, 2012 except when one of the following happens:
  - A new driveway is requested or an existing driveway use is changed based on certain criteria
  - Infill development or infill redevelopment occurs
  - Where a highway or interchange project occurs
- If one of these things happen the Oregon Department of Transportation shall determine whether the approach road spacing or safety is improved by moving in the direction of the appropriate spacing standards

Expressway Access Management Plan

Transportation System Management

- Traffic Signal Timing Modifications

  To address existing safety issues at the two signalized intersections (Carnes Road/Roberts Creek Road and OR 99/Grant Smith Road):
  - Provide protected left-turn phases in the north-south direction
  - Add clearance intervals for appropriate traffic phases in the north-south direction
- Permitted U-Turns

  In conjunction with the construction of medians to restrict turning movements, the following signal modifications are recommended at the Carnes Road/Roberts Creek Road and OR 99/ Grant Smith Road intersections:
  - Permit U-turns for passenger vehicles with protected left-turn arrow

Transportation Demand Management

- Bicycle and Pedestrian Facilities
  - Additional bicycle and pedestrian facilities in EMP
  - Improves connectivity and safety for these modes
  - Serves the portion of the population who rely on walking, bicycling, and transit for mobility, or choose to use such modes
- Park and Ride Facility
  - Future park-and-ride facility at the intersection of OR 42 and Carnes Road/ Robert Creek Road
    - Could take advantage of existing parking that is underutilized during the day
    - Could be part of a future shared-use development
    - Could be a standalone parking lot
  - Supports the existing Umpqua Transit bus service that travels along OR 42

OR 42/Carnes Rd/Roberts Creek Rd Potential Park-and-Ride Sites

Plan Monitoring

Project Type	Potential Locations	Monitoring
Traffic Signal	• OR 42/Rolling Hills Rd	• Monitor intersection traffic volumes to determine if traffic signal warrants are met or will soon be met • Monitor impacts of local system connectivity improvements
Other Capacity Improvements	• OR 42/Carnes Rd/Roberts Creek Rd Intersection • OR 42/OR 99/Gr • ant Smith Rd Intersection	• Monitor v/c ratios to determine if additional travel lanes are warranted • Monitor intersection traffic volumes to determine if additional left-turn lanes are warranted • Monitor crash patterns for increased frequency of crashes related to permitted left-turn movements
Right-Turn Deceleration Lanes	• OR 42/Rolling Hills Rd Intersection • OR 42/Landers Ave Intersection • OR 42/Emils Way/Grange Ro Intersection	• Monitor crash patterns for increased frequency of rear-end crashes related to right-turn movements • Monitor intersection traffic volumes to determine if right-turn lane warrants are met or will soon be met
Access Management	• OR 42/Rolling Hills Rd • OR 42 – East of Rolling Hills Rd through Landers Ave • OR 42/Emils Way/Grange Rd • OR 42/Winery Ln Intersection	• Monitor for continued pattern of turning and angle related collisions • Monitor ODOT SPIS database to identify segments with a rating in the top 10 percent. • Monitor for development
Local System Improvements	• Lookingglass Rd and Pepsi Rd • Rolling Hills Rd Extension • Melody Ln • Grange Rd • Winery Ln	• Monitor for persistent congestion and queuing on side streets • Monitor appropriate coupling with access restrictions along OR 42
Bicycle/ Pedestrian Improvements	• OR 42 - Lookingglass Rd to Winston Section Rd • OR 42/South Umpqua River Bridge/Winston Section Rd	• Current deficiency • Monitor for continued use of expressway shoulder for bicycle and pedestrian travel

Next Steps

- Review Draft OR 42 EMP
  - Review Period
- Finalize OR 42 EMP

Appendix 6-C

Public Open House Meeting Materials

OR 42 Expressway Management Plan – Open House

Roseburg, OR

December 1, 2011
ATTENDANCE SHEET

Name	Agency/Organization	Phone #	Email
Susan + Frank Jacinto	Traffic Safety Commission	541679 1368	
Jenny Jones		679-9756	
Dixie Long		679-3587	
Curtis Young	LANDSCAPE Contractor	679-7980	
Vaynn Currie	Currico RE	430-0195	
Kathy Smith		679-4412	
John Smith		" "	
Jill Wesober	Rsbg SD	440-4048	
P.D Barkalow		541-784-9332	
Tim Latham	Resident	541-679-1126	
Marvin + Janet Husen	Green Meadow Tel Park Mainstreet RV Sales	541 679-6187	
Jim & Bernice McClellan		541-679-8281	
Susan Morgan	Douglas County		
HAROLD PARKER		541-674-2866	
Linda Miller	resident	643.2809	
Don Jenkins	Rising River RV Park, Grange Rd	541-430-2718	
WAYNE BATES	DC PLANNING	541-440-4438	
DAVE EWERT	NEW HOPE CHURCH	541-817-6447	
GAION EADS	McDONALD'S	541-672-8105	

Project: OR 42 Expressway Management Plan
Job #: ODOT00000743
Subject: Open House Dec. 1, 2011

Reviewer	Company/Affiliation	Address	Phone	Email	Comment
Marvin Husen	Main St. RV Sales	5431 Grange Rd, Roseburg, OR	541-430-6778	marvinhusen@yahoo.com	I am in favor of improvements that bring us a safer highway-- these improvements should be cost effective and quick to implement. Two suggestions: 1. "Slow down" lane at Rolling Hills to allow traffic to get out of the way of high speed traffic behind them; both directions. 2. Same "right turn" "slow down" lane at Umpqua Bank.
Don Jenkins	Rising River RV Park	5579 Grange Rd	541-430-2718	risingrv@charter.net	Traffic light at Grange Rd.- Rolling Hill. 45 mph from I-5 to Winston
Janet Husen	Main St. RV Sales; Green Meadow Trailer Park	5461 Grange Rd. Roseburg OR 97471 / PO Box 2395, Winston, OR 97496	679-6187	mjb6187@charter.net	Lights needed at intersections- by Umpqua Bank, Landers Lane, and Rolling Hills to Grange Rd. In the fog it is nearly impossible to see the turn lanes. Signals needed at Rolling Hillls and connector road to Grange Rd. Bike path needed on East side of Hwy 42 all the way to Kelly's korner (Roberts Creek Road) with access to cross to west side bike path under the bridges, as well as at the new Rolling Hills signal. All striping needs to be redone and more reflective. Speed limit needs lowered all the way from Winston to I-5. Speed limits need to be enforced.
Meredith Smith	Resident	115 Victoria Roseburg	430-2990	meredith005@yahoo.com	I'm concerned about the entrance to 1-5 from 42. There is only one sign that tells you left lane to Roseburg, right lane to Medford. Most people have figured out and drive in the left lane well before Kelly's Corner (Chevron). However- those that don't know or choose to spped up in the right "empty" lane - then "smash" into the left lane about LOVE's. Put more signs up to direct traffic (before 1-5).
Perry Barkalow	(blank)	104 Angelcrest Ct. Roseburg, OR 97471	541-784-9332	(blank)	Getting from Grange Rd. and crossing 42 to go west. Hwy 42 traffic is too fast and oh so crowded.
Tim Latham	Resident	123 Kiss Court Roseburg, OR 97471	541-679-1126	(blank)	1. Noise abatement from trucks, "jake" brake usage and overly loud truck exhaust (caused by oversized exhaust pipe). 2. Corridor Safety- too many accidents at access points.
Wayne Bates	Douglas County Planning Dept. & Roseburg/Douglas Planning Advisory Committee	374 SE Ella St. Roseburg, OR 97470	541-440-0111	gwbates@co.douglas.or.us	Green is an "urban unicorporated area" not a city. Grange entry (east) to Hwy 42 is difficult-- suggest higher priority (also Emil's Way, same).
Susan Jacints	(blank)	Beverly Ct. Green District	541-629-1368	(blank)	Thank you for asking us for our input. Please, please pay attention so to best benefit us.
Linda Miller	N/A	5178 Lance	643-2809	(blank)	I live off Grange Rd. My disabled grandson lives across Hwy 42 in a foster home on Landers Ave. I fear that he might decide to come see me and try crossing Hwy 42. Grange Rd by bank is just plain dangerous. If turning left I never go to that intersection. Instead I go to Rolling Hills. My suggestionis expensive-- a flyover from just east of Melody (Jackie) all the way to the bridge that goes over the RR tracks with freeway type entrance/exits near Carnes Rd. intersection.
BJ & Dixie Long	(blank)	2327 Jackie Ave	541-679-3587	bjlong@charter.net	concern for access if Jackie is closed. Roads around to Rolling Hillls is narrow, gravel, and pot holes.
Dick Thornley	(blank)	5110 Grange Rd.	541-643-0037	djthorn1@msn.com	Off lane and on lane at Rolling Hills and Grange Rd. on and off at Hwy 42.
Dana & Molly Jacobsen	(blank)	120 Winston Sec Rd.	679-3218	mses@homeschoolin.com	1. Need dedicated turn lane turning off Hwy 42 going East onto Grange Rd. to get to Bank/Post Office/Subway/McDonald's so traffic doesn't backup and to increase safety. 2. Going onto I-5 from Hwy 42…need two full lanes that go onto Hwy 42 with an additional lane that allows one to immediately exit at the next exit to access south Roseburg without having to merge into a fast lane of traffic and then exit.

Project: OR 42 Expressway Management Plan
Job #: ODOT00000743
Subject: Open House Dec. 1, 2011

Reviewer	Company/Affiliation	Address	Phone	Email	Comment
Jenny Jones	Widow of deceased 9/24/10	913 Willis Creek rd. Winston	679-9756	(blank)	1. Have copies of all charts/data for public to take home for personal study. 2. I have asked to serve on committee due to my husband's death 9/24/10 at Grange Rd and Hwy 42. 3. Why can't speed from 1-5 to Winston be lowered to 45 mph now while other long term changes be considered? 4. I would like the speed reduced to 45 mph and traffic light where my husband, George Jones, was killed. A stop light there with no left turn except on green arrow, could have saved him!
Gary Eads	McDonald's	536 Winchester St. F Roseburg, OR Business Adress: 4779 Grange Rd. Roseburg	541-372-8105	gary.eads@partners.mcd.com	Lighting along Corridge; new signal needs timed or co-ordinated to create break in traffic. If access is to change at Grange Rd to McDonald's and other business creat access from Roberts Creek Rd. Right turn lanes to allow cars turning to get out of flow of traffic. Foot bridge over Hwy 42. Thank you for taking input-- was expecting to see plan that was almost complete that would have been presented (complete).
Frank Jacinto	Douglas Co. Traffic Safety Commission	149 Beverly Court, Roseburg 97471	541-679-1368	frja.pr@gmail.com	One particular area of concern is the intersection of Lookingglass and Hwy 42. The westbound speed limit is 45. Entry to 42 from Lookingglass is very hazardous. Traffic entry to wildlife safari is heavy at times and Hwy 42 speed limit is 45 mph- seldom observed. I believe it would be prudent to move both the 45 mph sign and the 30 mph sign east of lookingglass to attempt to get traffic to slow on 42 prior to reaching lookingglass/ an attempt to synchronize the lights at Carnes Road and the 99 northbound light would assist in traffic flow from the Green District to I-5.
(blank)	(blank)	(blank)	(blank)	(blank)	1. Rolling Hills/42/99 Intersection needs signal - many "close calls" and several accidents. 2. Hwy 42- southbound I-5 on ramp the nice banked curve becomes flattened prior to becoming straight-- creating a bad situation because the vehicles lose the support of the banked curve at a high speed-- this has caused accidents. 3. Complete Rolling Hill to cut traffic at school.

Project: OR 42 Expressway Management Plan
Job #: ODOT00000743
Subject: Follow-up Comments Regarding Open House Dec. 1, 2011

Reviewer	Company/Affiliation	Address	Phone	Email	Comment
Joyce Thompson		312 S. Savoy Court Roseburg, OR 97471		joycejetson@gmail.com	Thank you for the opportunity to provide feedback on potential work on Hwy 42 in the Green area. I was unable to attend the public meeting you held. I live in the area and have had a concern over the traffic on Hwy 42 since I moved here. One of the people that was killed at Kelly's Corner this last year was from my neighborhood. I read in a publication that, if Green was incorporated, it would be the second largest town in Douglas Co. There's a lot of traffic on Hwy 42 here. Yet, the speed limit through this area is 50 MPH. Knowing human psychology and also knowing that the police frequently do not stop someone unless they are going at least 10 MPH over the speed limit means that drivers are actually driving 60 MPH in the area frequently. I've witnessed it many times. I've also witnessed not only cars but commercial trucks speeding up to make the light. I'm very cautious on entering the intersection or Carnes and Hwy 42 because of that. One simple improvement would be to lower the speed limit and have law enforcement target the area for awhile. I know that people living in Winston would disagree but I feel safety should be the top priority. Another frustration of mine happens every morning on the way to work in Roseburg. Drivers who feel they are more important than anyone else on the road get into the right lane to speed past everyone else and will frequently get back into the right lane at the last minute. This behaviour slows down the traffic for more courteous drivers plus is high risk for an accident. One potential improvement would be to make the right lane an exit only lane from approximately the intersection with Hwy 99. That would at least get more people in the left lane to Roseburg quicker. I'm glad to hear your looking at access to residences and businesses in the area. Because of the heavy traffic in the area, drivers do weird things to be able to cross traffic. I've been in the turn lane for Grange Rd. before and had traffic coming from the opposite direction headed straight at me at a high rate of speed wanting access to the street opposite. I have no potential solutions to this problem other than better access to the residences and businesses. This may mean more stop lights.
Larry Arthur			541-733-9433		OR 42/Carnes Rd. (Kelly's Corner) - Connect Rolling Hills to Happy Valley Rd. would alleviate traffic congestion at the Kelly's corner intersection.
John Westwang			541-643-6807		EB OR 42 merging into left lane just before Kelly's Corner, WB OR 42 turning left into Grange Rd. This is a problem area. Wants something done with the left turn lane on OR 42 at the Grange Rd./Emils Ways intersection. Recommends businesses take access off Roberts Creek Rd. to access Grange Rd. EB OR 42 at Grants Smith Rd. vehicles speed up to merge into left lane to go NB on I-5. This is a problem area.
Kathy Smith					In the News Review on Tues. there is an article on plans for improving Hwy 42. Part of what is in the article is that ODOT plans " Two streets and private driveways emptying onto the highway will be closed as part of that project to improve safety." As my main concern is with access, I am writing you to request information on these planned closures. I do know sometimes the information in the news paper is different than what is the actual case, but, I saw nothing at the public meeting or at the CAC meeting about closing roads. I did speak with Mike Lettrel at the County and told him we are very concerned that ODOT does not eliminate left turns onto Grange Rd at the Emils Way end. Mike also told me he did not think the access to the light behind Shirtcliff's would work as it would not have enough room for stacking trafic. These are John and my main concerns now. I did speak with a tenant the other day and he is most concerned with the speed on Hwy 42. Thank you for your time and for allowing my input.

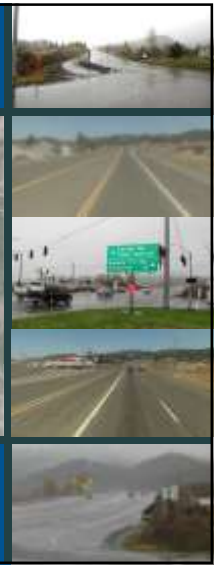
Project: OR 42 Expressway Management Plan
Job #: ODOT00000743
Subject: Follow-up Comments Regarding Open House Dec. 1, 2011

Reviewer	Company/Affiliation	Address	Phone	Email	Comment
Tim			(541) 679-6771		I received a telephone message from a citizen that lives in Green expressing concerns of the vertical curve westbound from I-5 to Kelly's corner. Driver expectation is to look up for a signal, but the vertical curve and high speed does not prepare a driver for a traffic signal. The traffic signal at Kelly's corner seems to be located in a hole.
John Oltman	ODOT				At the Hwy 42 EMP open house last night, a question came up from the general public asking why there were not more signs heading east bound beyond Kellys Corner showing the right hand drop lane to SB I-5. They were concerned about the traffic imbalance and the people who would come up on the right side then try to cut in to head north. They understood the local's behavior but they were concerned the lack of signing did not give "out of towners" enough warning of the drop lane. This question will probably come up in the comment cards given to the consultant. I do not have a direct way to answer the inquirer so our response will have to be routed back thru the planning consultant.

OR 42 Expressway Management Plan (EMP)

Open House
December 1, 2011

WELCOME



OR 42 Expressway Management Plan

What is it?

- A planning study of the OR 42 Expressway Corridor from Lookingglass Road in Winston to I-5 Exit 119

What does a planning study do?

- Inventory facilities and understand how the corridor operates
- Recommend ways to make existing and future traffic flow better

What type improvements will be considered?

- Access management like driveway consolidation, realignment, closure, local network improvements
- System management like traffic signals, signal coordination
- Capacity improvements like turn lanes, additional travel lanes
- Safety improvements like better sight lines, flashers, travel speeds

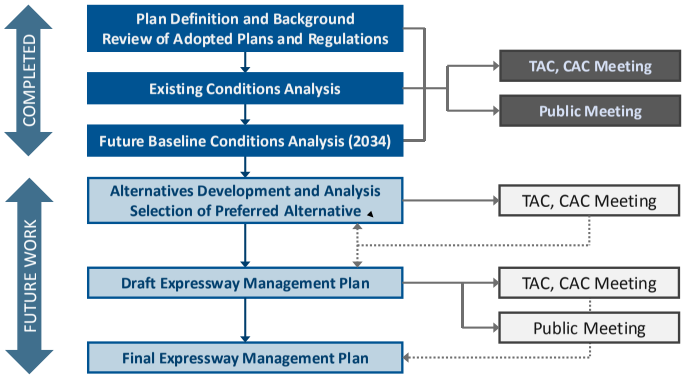
Potential Impacts of Improvements

How could properties be affected?

- Changes to accesses (driveways and/or public streets) could require:
  - Consolidation
  - Relocation
  - Closure
- Additional right of way may be needed for:
  - New turn lanes at intersections
  - Wider shoulders and modified corners for turning
  - Intersection realignment
  - Local street connections

Corridor Planning Area

Corridor Planning Process

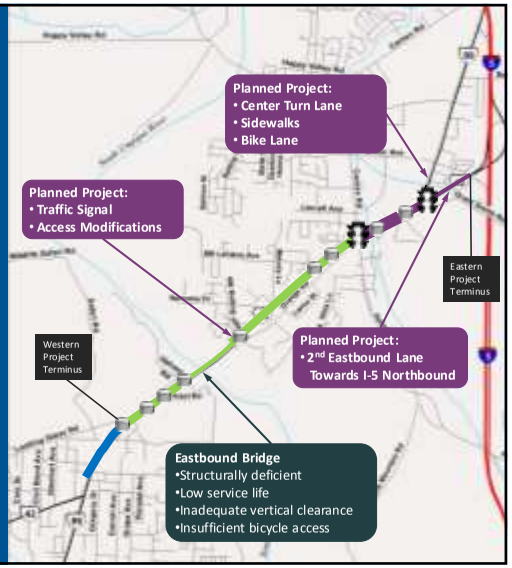


Expressway Management Plan Goals

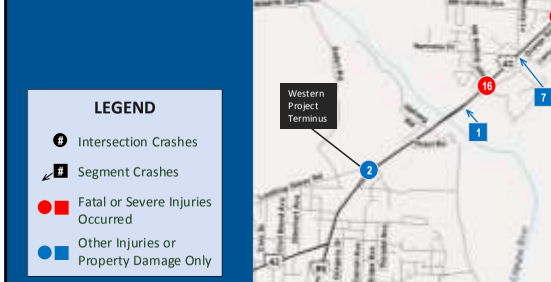
The goals of this EMP are to develop a plan for improvements that can be implemented over time to:

- Improve safety and operations of the expressway corridor for all modes of travel.
- Upgrade the corridor to meet Expressway standards.
- Facilitate freight travel by maintaining efficient through movement in the corridor.
- Provide better accessibility to Roseburg, Winston, and the Green Area consistent with the adopted local comprehensive land use and transportation plans

OR 42 Corridor Inventory



OR 42 Crash Summary (2005-2010)



Traffic Volume Summary

LEGEND

TEV = Total Entering Vehicles (at an intersection in 1 hour)

ADT = Average Daily Traffic (on a roadway segment)

2011 Volume
2035 Volume
% Increase

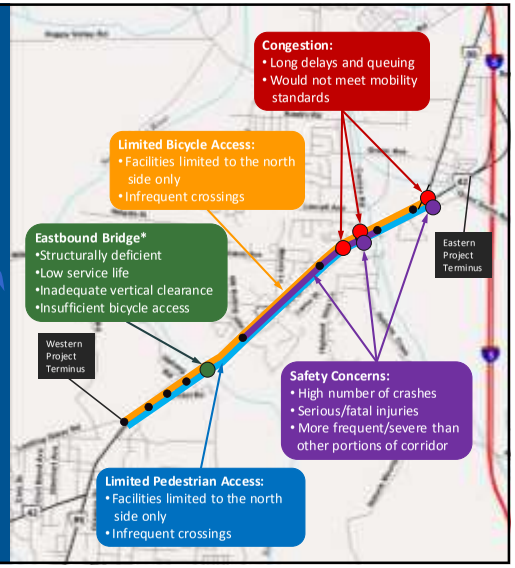
Note: Future ADT volumes are based on peak hour volume growth.

Identified Issues

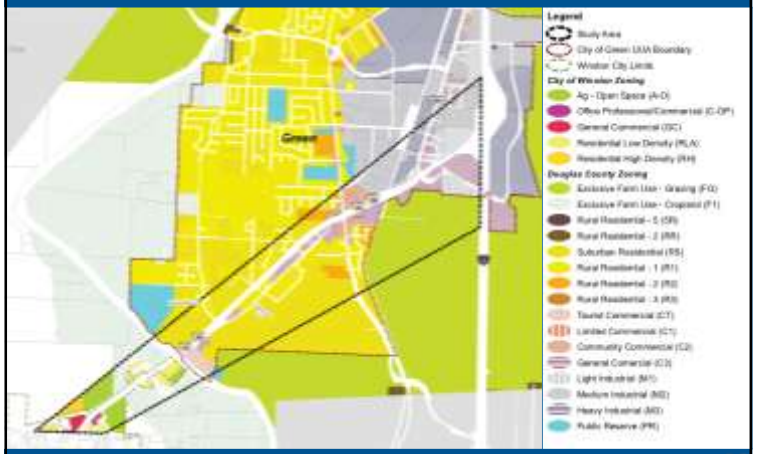
LEGEND

- Spot Issue
- Segment Issue
- Safety
- Operational
- Pedestrian
- Bicycle
- Bridge

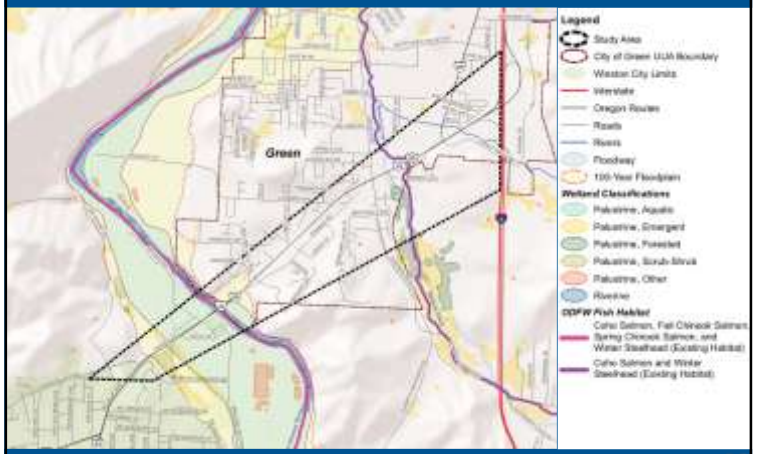
** Recent bridge repairs have addressed vertical clearance deficiencies.*



Zoning Map Designations



Natural Features



OR 42 Expressway Management Plan – Open House

Roseburg, OR

January 9, 2013
ATTENDANCE SHEET

Name	Agency/Organization	Phone #	Email
Tom Guevara	ODOT	(541) 957-3692	Thomas.Guevara@odot.state.or.us
Pat Spangler	Spangler Vineyards	541-679-8654	Pat@Spanglervineyards.com
Edward Dieterinson	property owner	541-430-3491	—
Tom & Sorene Forrest	Resident	541-784-2128	covinaforrest@yahoo.com
Richard Humboldt	Resident	541-679-7254	
Gary Eads	McDonald's	541-672-8105	Gary.Eads@partner.mcd.com
Dan Lathan	ODOT	541-957-3601	dan.lathan@odot.state.or.us
Amy Latham	Fullerton IV	—	—
Danny Thompson	Property owner	541-530-2206	dannyt2846@gmail.com
Ken + Sharon Harrison	Sharon - Mayor of Winston	541 679 8380	harrisonsk62@yahoo.com
Valyum Currie	Currieco	541 430 0195	vcurrie223@aol.com
John + Donna Collins	Resident	541 643 4657	spot@lookoutfarm.com
MIKE ANDERSON	RESIDENT	541-679-7464	
MAIL PLAN * MARGO WILKINS	Resident		647 Highland Vista Rd Roseburg 97471
* Elizabeth Mathe	resident	541-440-8971	230 Owyhee Lane

OR 42 Expressway Management Plan
Open House #2
January 9, 2013

Name	Affiliation	Date Received	Comment #	Comment
Burt Tate	Roseburg Bicycle/Pedestrian Coalition	1/9/2013	1	Projected traffic volume increases seem extremely high over the next 22 years., and one wonders why other areas of the country show a decline in the car miles per capita, but not here.
Burt Tate	Roseburg Bicycle/Pedestrian Coalition	1/9/2013	2	The local environment is acutely affected by this highway, and there appear to be few concerns about beautification, trees for shade, and enhancement of the natural environment. Trees provide beauty, shade for walkers/bikers, and help diminsh traffic noise and pollution. PLANT SOME TREES!
Burt Tate	Roseburg Bicycle/Pedestrian Coalition	1/9/2013	3	Slowing traffic and installing roundabout would improve safety, maintain traffic flow, and make a more pleasant ride. This trend in happening throughout the worldand country. Let's improve traffic flow, not speed it up. Reduce the speed, save fuel, and save lives.
Margo Wilkins		1/9/2013	4	Top priority: ASAP install raised barrier at corner of OR 42/Carnes Rd. Cars coming onto OR 42 from Carnes Rd. cut into the left turn lane where cares are stopped to make a left turn onto Roberts Creek (from OR 42).
Margo Wilkins		1/9/2013	5	Widen OR 42 going onto I-5 overpass.
Margo Wilkins		1/9/2013	6	Cheapest solution at Rolling Hills is to erect stop lights and reconfigure turn lanes
Margo Wilkins		1/9/2013	7	Let's save some lives first rather than proposing projects that are too expensive.
John Collins	Resident	1/9/2013	8	Eastbound OR 42 onto I-5 North-ramp is narrowed by guardrail right after light, forcing a merge heading into an unpredicatble light at OR 99. Maybe clarify left vs. right lane use: move I-5 north and left only vs. I-5 south only further up OR 42. Then enforce it-also encourage better driver response to light changes thru enforcement.
John Collins	Resident	1/9/2013	9	Trucks from Love's plus OR 99 industry bog down and often cut off flow. Can Love's get a 55 entry/exit and add an entry both ways off OR 99 in Green?

OR 42 Expressway Management Plan
Open House #2
January 9, 2013

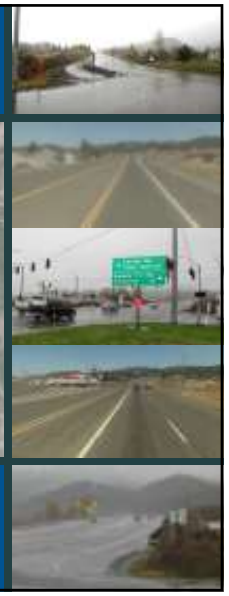
Name	Affiliation	Date Received	Comment #	Comment
Billie Boerste		1/9/2013	10	I live at 171 Art Mill Lane-my concern is access from my property to OR 42. Additional concerns include property zoning and resale value.
Richard Thornley		1/9/2013	11	Traffic light at Rolling Hills
Richard Thornley		1/9/2013	12	Decerlation lanes at all right turns. This was suggested at the last meeting.
Richard Thornley		1/9/2013	13	Extension of east end of Grange Rd.
Bill Whitehead		1/9/2013	14	Signal at Rolling Hills
Bill Whitehead		1/9/2013	15	Rolling Hills to Happy Valley
Muriel Nichalis		1/9/2013	16	In regard to project #1, I've been watching/working on the path under the green bridge for a year! It needs to happen.
Muriel Nichalis		1/9/2013	17	In regard to project #3, I also think the signal at Rolling Hills/Grange Rd and OR 42 is very important.
Jorene Forrest		1/9/2013	18	I'm concerned regarding neighborhood residents across OR 42 having to run across OR 42 to the park, send mail, or rush their children over to McDonald's- It is way too dangerous.
Jorene Forrest		1/9/2013	19	I'm please that Pepsi Rd will be extended to a "signal" at Lookingglass Rd.
Brad Kelsay	Property owner on corner of Carnes/OR 42	1/9/2013	20	Very good graphics and layout of what is suggested. We were wondering about access to our property.
Charles Saunders	Property owner	1/9/2013	21	Hopefully the signal wil goin in at OR 42/Rollling Hills. Thank you.
Donna Collins		1/9/2013	22	Extending Grand Rd thru to Roberts Creek is something that has been needed for a long time. Excellent to see it has high prioirty on your plan!

Name	Affiliation	Date Received	Comment #	Comment
Donna Collins		1/9/2013	23	Add "slow traffic keep right" signage throughout the study area. A high percentage of drivers in this section relate to OR 42 as a local road rather than a highway.
Donna Collins		1/9/2013	24	Open 2nd lane on I-5 north and overpass. This would solve many problems.
John Collins		1/9/2013	25	I don't see patrol and enforcement levels that correspond to the leve of danger/problem areas. Much of the current and future issues could be reduced if bad behaviour was discouraged- speeding, passing on the right, and sluggish responses to signals all contribute to magnify issues.
John Collins		1/9/2013	26	The plan appears well thoughtout-well done!
John Collins		1/9/2013	27	Many people treat the road as an expressway and many treat it as a local road; eg: 35 mph in left lane, sluggish entry to I-5, etc- this drives others to take chances-way too many lousy dirves in general-where's DMV regarding lousy drivers?
Georgia Saunders		1/9/2013	28	I was T-boned by an oncoming car at OR 42/Rolling Hills/Grange intersection 6 years ago. I would be thrilled if a traffic signal could be installed there. It is extremely difficult to come out on Grange and attempt to turn left (south) towards Winston. We've witnessed and experienced near misses at this location.
Linda Miller		1/9/2013	29	Suggest cutting the grass along the existing bike path earlier. Coming from Melody Lane onto OR 42 visiion is blocked.
Linda Miller		1/9/2013	30	Like EMP projects #2-4, 6-10, 15, and 17.
Ken Patton	New Hope Church	1/9/2013	31	---

OR 42 Expressway Management Plan (EMP)

Open House
January 9, 2013

WELCOME



OR 42 Expressway Management Plan

What is it?

- A planning study of the OR 42 Expressway Corridor from Lookingglass Road in Winston to I-5 Exit 119

What does a planning study do?

- Inventory facilities and understand how the corridor operates
- Recommend ways to make existing and future traffic flow better

What is the purpose of today's Open House?

- Review improvement concepts recommended in the Draft EMP
- Ask questions about the plan
- Provide feedback on comment cards

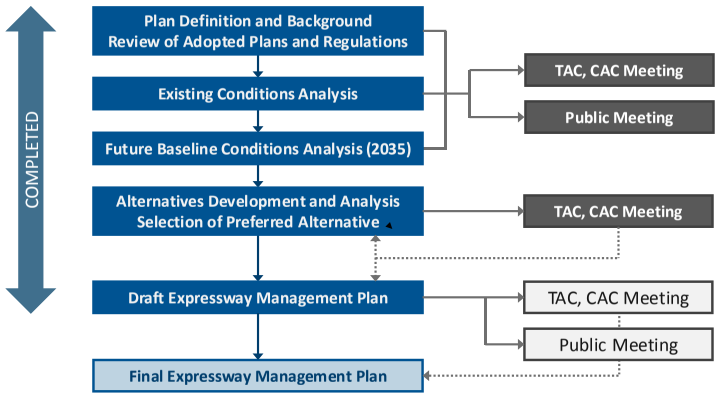
Expressway Management Plan Goals

The goals of this EMP are to develop a plan for improvements that can be implemented over time to:

- Improve safety and operations of the expressway corridor for all modes of travel.
- Upgrade the corridor to meet Expressway standards.
- Facilitate freight travel by maintaining efficient through movement in the corridor.
- Provide better accessibility to Roseburg, Winston, and the Green Area consistent with the adopted local comprehensive land use and transportation plans

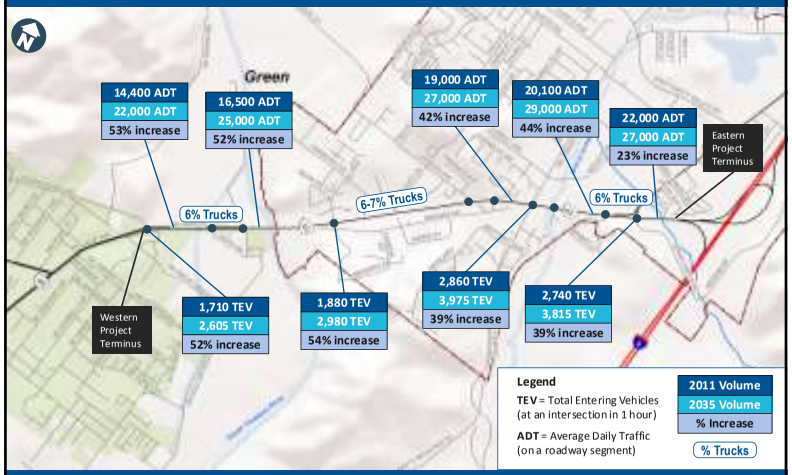
EMP Study Area

Corridor Planning Process

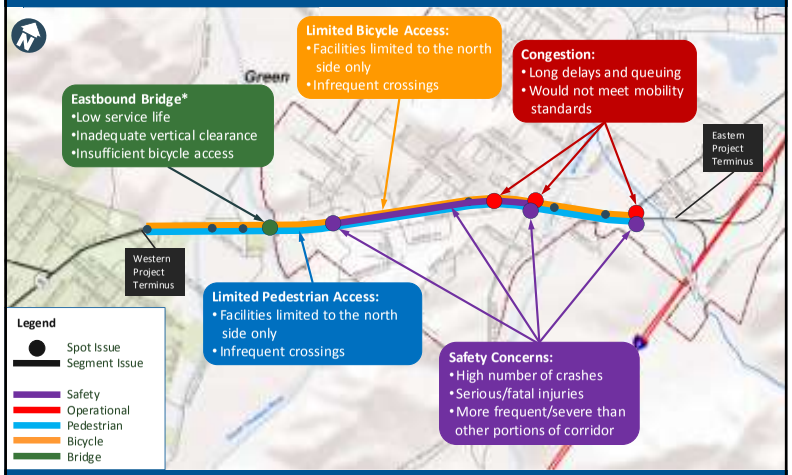


OR 42 Crash Summary (2005-2010)

Traffic Volume Summary



Identified Issues



Draft Plan Organization

VOLUME 1

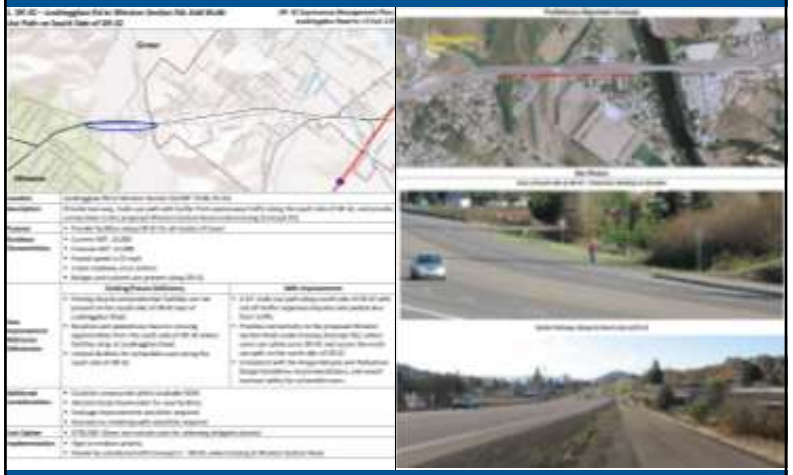
1. INTRODUCTION
2. EVALUATION OF BASELINE CONDITIONS
3. SUMMARY OF EXPRESSWAY DEFICIENCIES
4. EMP IMPROVEMENTS
5. EXPRESSWAY ACCESS MANAGEMENT PLAN
6. OTHER MANAGEMENT ACTIONS
7. PLAN MONITORING AND FUNDING

VOLUME 2

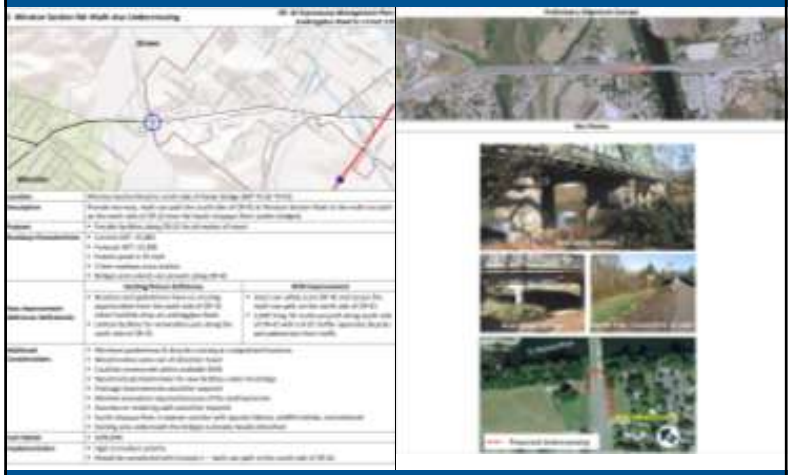
- Technical material
- Detailed process documentation
- Summary of Public Outreach

EMP Improvements

EMP Project 1



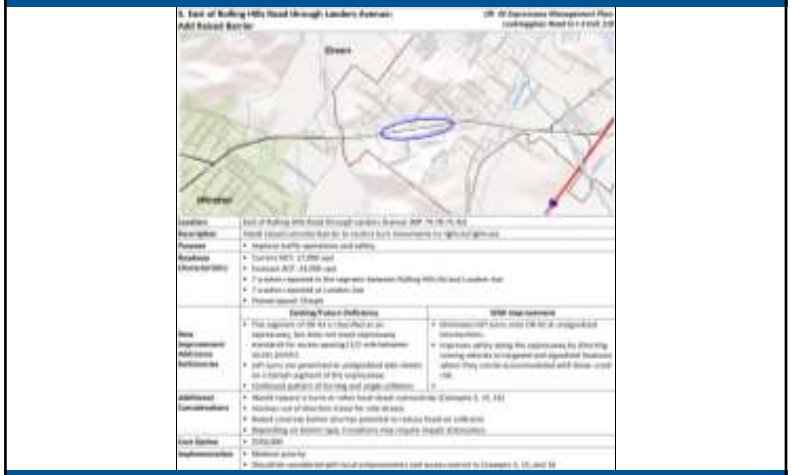
EMP Project 2



EMP Project 3

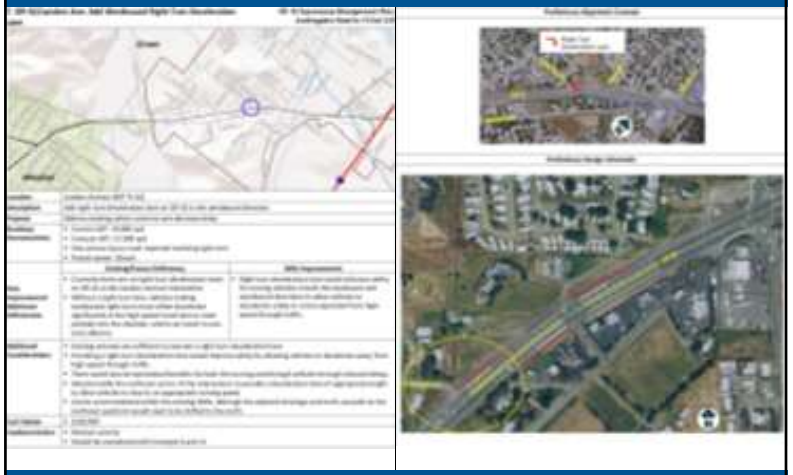
EMP Project 4

EMP Project 5



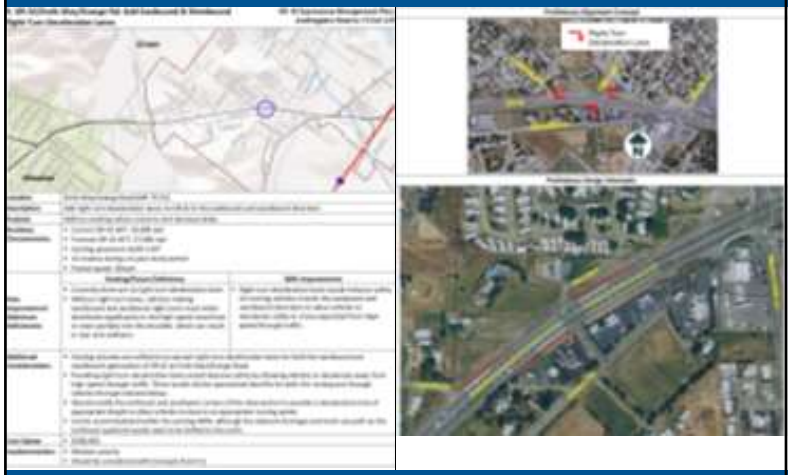
EMP Project 6

EMP Project 7

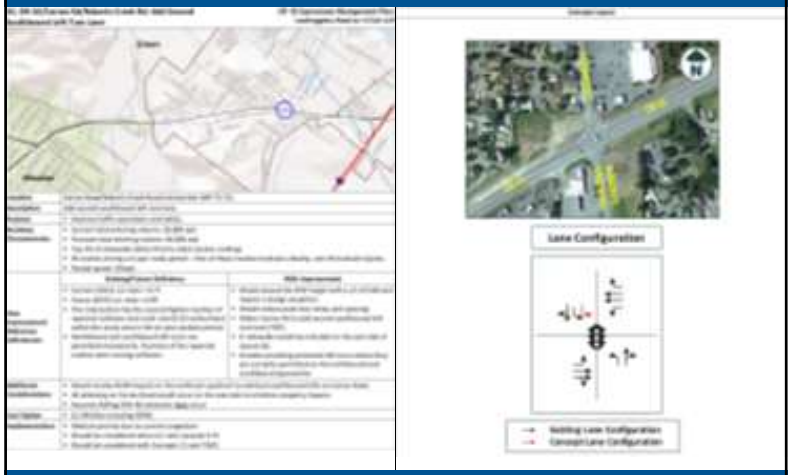


EMP Project 8

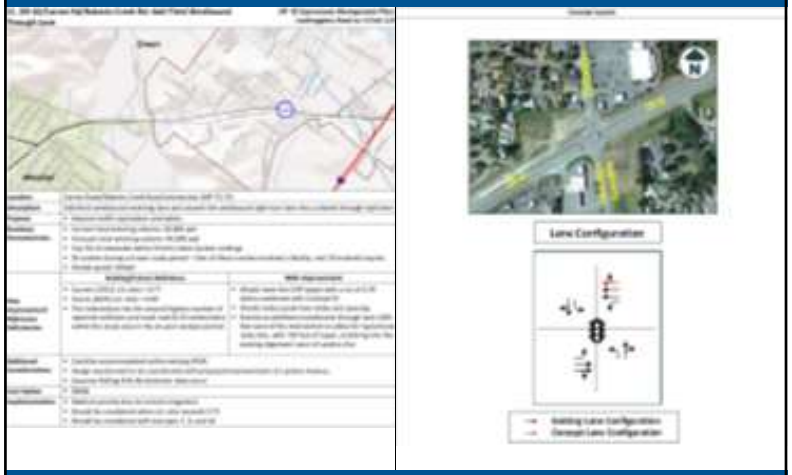
EMP Project 9



EMP Project 10

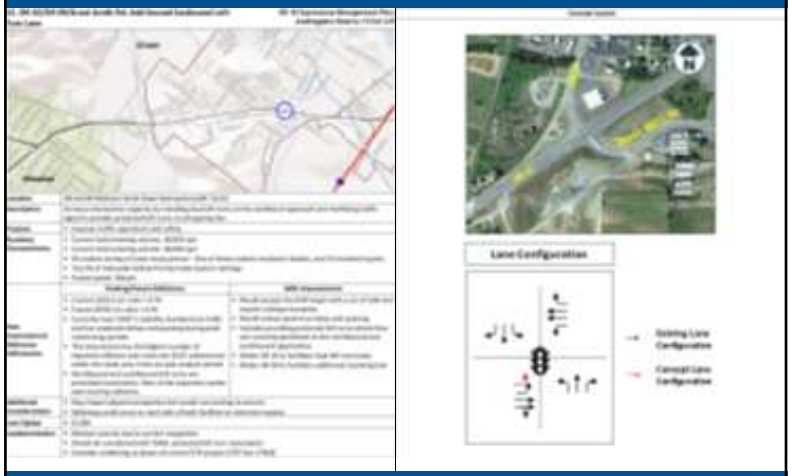


EMP Project 11

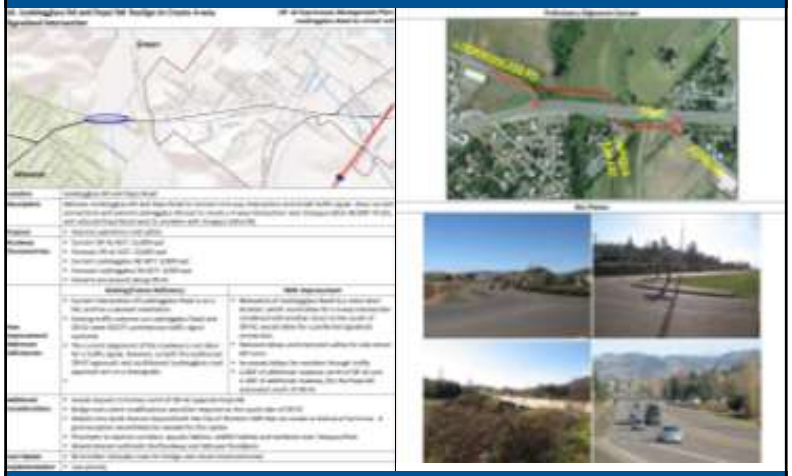


EMP Project Sheet 12

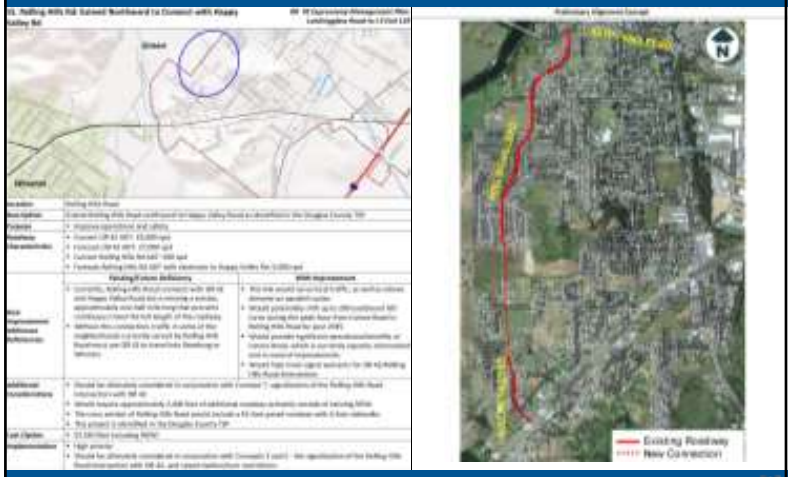
EMP Project 13



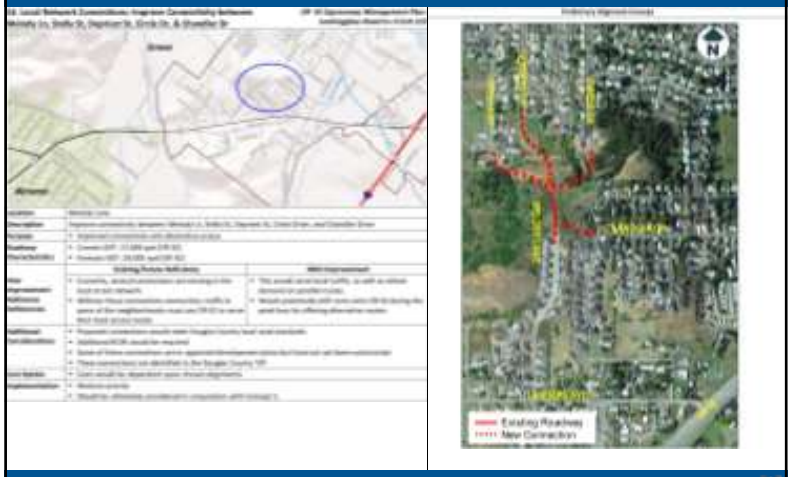
EMP Project 14



EMP Project 15

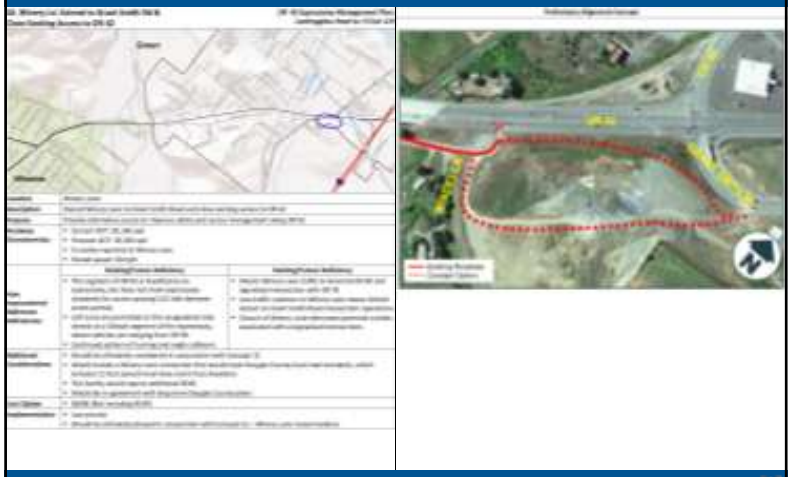


EMP Project 16

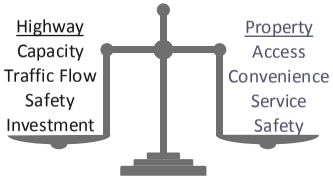


EMP Project 17

EMP Project 18



Access Management Plan (AMP)



- Access Management Standards
  - Standards in plan will be adopted by the Oregon Transportation Commission
- Access Management Actions
  - Access management would happen when:
    - Applications for land use changes or development are submitted
    - Future highway improvement projects move into design and construction
    - Safety and/or operational problems arise

Private Approaches

- Standards do not apply to driveways in existence prior to January 1, 2012 except when one of the following happens:
  - A new driveway is requested or an existing driveway use is changed based on certain criteria
  - Infill development or infill redevelopment occurs
  - Where a highway or interchange project occurs
- If one of these things happen the Oregon Department of Transportation shall determine whether the approach road spacing or safety is improved by moving in the direction of the appropriate spacing standards

Reference: Oregon Administrative Rule 734-051-4020, Standards and Criteria for Approval of Private Approaches

Expressway Access Management Plan

Transportation System Management

Traffic Signal Timing Modifications

To address existing safety issues at the two signalized intersections (Carnes Road/Roberts Creek Road and OR 99/Grant Smith Road):

- Provide protected left-turn phases in the north-south direction
- Add clearance intervals for appropriate traffic phases in the north-south direction

Permitted U-Turns

In conjunction with the construction of medians to restrict turning movements, the following signal modifications are recommended at the Carnes Road/Roberts Creek Road and OR 99/ Grant Smith Road intersections:

- Permit U-turns for passenger vehicles with protected left-turn arrow

Transportation Demand Management

Bicycle and Pedestrian Facilities

The additional bicycle and pedestrian facilities in the EMP improves connectivity and safety for these travel modes. More importantly, these facilities serve the portion of the population who rely on walking, bicycling, and transit for mobility, or choose to use such modes.

Park and Ride Facility

In support of the existing Umpqua Transit bus service that travels along OR 42, this plan recommends that a potential location for a future park-and-ride facility be investigated at the intersection of OR 42 and Carnes Road/Robert Creek Road. The facility could take advantage of existing parking that is underutilized during the day, it could be part of a future shared-use development, or it could be a standalone parking lot.

OR 42/Carnes Rd/Roberts Creek Rd Potential Park-and-Ride Sites

Plan Monitoring

Project Type	Potential Locations	Monitoring
Traffic Signal	• OR 42/Rolling Hills Rd	• Monitor intersection traffic volumes to determine if traffic signal warrants are met or will soon be met • Monitor impacts of local system connectivity improvements
Other Capacity Improvements	• OR 42/Carnes Rd/Roberts Creek Rd Intersection • OR 42/OR 99/Gr • ant Smith Rd Intersection	• Monitor v/c ratios to determine if additional travel lanes are warranted • Monitor intersection traffic volumes to determine if additional left-turn lanes are warranted • Monitor crash patterns for increased frequency of crashes related to permitted left-turn movements
Right-Turn Deceleration Lanes	• OR 42/Rolling Hills Rd Intersection • OR 42/Landers Ave Intersection • OR 42/Emils Way/Grange Ro Intersection	• Monitor crash patterns for increased frequency of rear-end crashes related to right-turn movements • Monitor intersection traffic volumes to determine if right-turn lane warrants are met or will soon be met
Access Management	• OR 42/Rolling Hills Rd • OR 42 – East of Rolling Hills Rd through Landers Ave • OR 42/Emils Way/Grange Rd • OR 42/Winery Ln Intersection	• Monitor for continued pattern of turning and angle related collisions • Monitor ODOT SPIS database to identify segments with a rating in the top 10 percent. • Monitor for development
Local System Improvements	• Lookingglass Rd and Pepsi Rd • Rolling Hills Rd Extension • Melody Ln • Grange Rd • Winery Ln	• Monitor for persistent congestion and queuing on side streets • Monitor appropriate coupling with access restrictions along OR 42
Bicycle/ Pedestrian Improvements	• OR 42 - Lookingglass Rd to Winston Section Rd • OR 42/South Umpqua River Bridge/Winston Section Rd	• Current deficiency • Monitor for continued use of expressway shoulder for bicycle and pedestrian travel

Winston
Coos Bay
Roseburg
WEST
SOUTH
NORTH
42
99
99